

**Mafia Island Airport Upgrade
FINAL
PERFORMANCE EVALUATION BASELINE REPORT**



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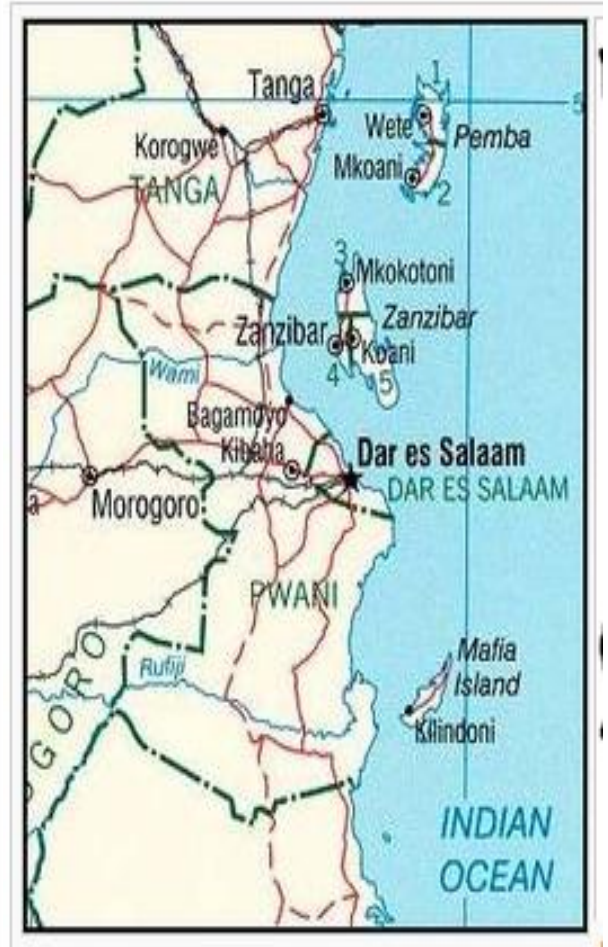
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List of Abbreviations and Acronyms

COSTECH	Commission for Science and Technology
CSPro	Census and Survey Processing System
DED	District Executive Director
ESRF	Economic and Social Research Foundation
FGD	Focus Group Discussion
HBS	Household Budget Surveys
IGA	Income Generating Activity
LGA	Local Government Authority
M&E	Monitoring and Evaluation
MCA-T	Millennium Challenge Account Tanzania
MCC	Millennium Challenge Corporation
MDA	Ministry, Department and Agencies
MIMP	Mafia Island Marine Park
MKUKUTA	Mkakati wa Kukuza Uchumi na Kupunguza Umaskini Tanzania (It is the Swahili acronym for the National Strategy for Growth and Reduction of Poverty)
MKUZA	Mkakati wa Kukuza Uchumi na Kupunguza Umaskini Zanzibar (It is the Swahili acronym for the Zanzibar Strategy for Growth and Reduction of Poverty)
NGO	Non Governmental Organization
MLFD	Ministry of Livestock and Fisheries Development
MNRT	Ministry of Natural Resources and Tourism
NSGRP	National Strategy for Growth and Reduction of Poverty
NBS	National Bureau of Statistics
PHDR	Poverty and Human Development Report
RAS	Regional Administrative Secretary
SPSS	Statistical Package for Social Scientists
TAA	Tanzania Airports Authority
TCAA	Tanzania Civil Aviation Authority
TIC	Tanzania Investment Center
ToR	Terms of Reference
TTB	Tanzania Tourist Board

Location of the Study Area



1. INTRODUCTION

1.1 Project Background

The Government of the United States of America acting through the Millennium Challenge Corporation (MCC) and the Government of Tanzania (GoT) acting through the Ministry of Finance have entered into a Millennium Challenge Compact for Millennium Challenge Account Tanzania (MCA-T) assistance to help facilitate poverty reduction through economic growth in Tanzania. The consultative process for the Program was informed by, and anchored in, the consultative process conducted in connection with the Government's National Strategy for Growth and Reduction of Poverty (NSGRP) which was finalized in 2005 (commonly referred to by the Swahili acronyms "MKUKUTA" and "MKUZA," for the mainland and Zanzibar, respectively).

The Compact is to be implemented over a period of five (5) years. Guided by MKUKUTA/MKUZA priorities, the Compact establishment process identified an inadequate transportation network, an insufficient and unreliable supply of energy, and a shortage of potable water as three key constraints to economic growth and private investment in Tanzania. The Millennium Challenge Compact Program is designed specifically to address each of these constraints. The Compact aims at reducing poverty through the implementation of a program consisting of three projects, namely **transport, energy and water** projects. Each project contains a number of activities and sub-activities.

The three infrastructure development projects are core components of the Compact. However, the Compact has a Monitoring and Evaluation (M&E) unit, which plays an important role in the management of the program by ensuring that the resources going into the Compact are being utilized effectively and efficiently; activities are implemented in a timely manner; services generated are being accessed, utilized and beneficiaries are satisfied with the services; and the expected results are being achieved in a sustainable manner. The M&E plan for Tanzania Compact is guided by both the national poverty monitoring system and the economic analysis that identified beneficiaries and provided economic rationale for the MCA-T programme.

Upgrading of Mafia Island Airport is one of the sub-projects (components) under MCA-T's Transport Sector Project. The sub-project is geared to addressing the existing problem of access to the island as a result of poor condition of its airport and lack of feasible alternative transport options. Specifically, the sub-project will:

- a) Refurbish the runway, drainage, and establish boundary security (fencing works);
- b) Conduct additional environmental assessments, together with any resulting Resettlement Action Plans (RAPs) consistent with the World Bank Operational Policy and Environmental Management Plans (EMPs) each as needed and as satisfactory to MCC;
- c) Build the capacity at the Tanzania Airports Authority (TAA) – This includes improvements in strategic maintenance planning and management of routine and periodic maintenance contracts; and
- d) Co-ordinate and supervise the construction works.

Mafia district is an archipelago of islands made up of the main Mafia Island and other smaller islands of Jibondo, Bwejuu, Chole and Juani, which are permanently inhabited. Nyororo, Shungi mbili and Mbarakuli are other associated small islands that host migrant fishers who only go there seasonally following fish species seasonal abundance. For centuries, the island was a trading stop for Shirazi merchants travelling up towards Persia and under the rule of the Omani sultanate in Zanzibar. In 1890, Britain declared a protectorate over the territory of Sultan Sayid Ali, but part of this territory, namely Mafia, was traded to the German colonialists who moved the headquarters from Chole Mjini to Kilindoni on the main island (Chole Shamba) as it was more accessible. This meant that Mafia was

administered as part of the mainland of Tanzania, unlike Zanzibar. Kilindoni remains the administrative and commercial capital of Mafia until today.

The main livelihood activities in Mafia are agriculture, livestock-keeping, fishing, industry and trade. Agricultural crops, such as cashew nut, coconut, paddy, fruits, vegetables, and sweet potatoes, are cultivated; together with fish, some are transported and sold in the Dar es Salaam market through Kisiju and Nyamisati in the Rufiji delta. Livestock keeping is on a very small scale mainly for food, but also cash income when needed.

Farming and fishing are seen as complementary activities, carried out by both men and women, though usually with different areas of responsibility. Women would collect octopus and bivalves, whilst men would go out in boats. Cash crops in Mafia include coconuts and cashew nuts. Mafia is the chief source of fish to Dar es Salaam, about 900 tones of various fish resources are fished annually. There is also commercial aquaculture on the island namely prawn hatchery, prawn farming and sea weed farming. Pearl oyster farming is also being pioneered. The only other main industry on Mafia is tourism.

Mafia Island is one of the most exciting diving and fishing areas in the world and is home to about four hundred species of fish and five species of turtle. Sports fishermen flock there for the superb catches, many of them great fighters, which include barracuda, marlin, sailfish and tuna. Divers see a veritable kaleidoscope of reef dwellers among the fifty types of coral. These include butterfly fish, clown fish, lion fish and rainbow fish while, in deeper waters, they come across groupers, rays and sharks. The rare dugong breeds in the Mafia channel while the green and hawksbill turtle nest on the smaller islands.

Mafia Island is a popular destination for visitors to relax after their safari and the island's relaxed and secluded beaches offer privacy and comfort for discerning travelers.

1.2 Objectives

The objective is to conduct evaluation of the Mafia Island Airport Upgrade project, including evaluation design, data gathering, analysis and dissemination. This report aims at outlining the baseline status of Mafia before the implementation of the project. Findings in this report establish a starting point upon which changes expected to be brought about by the Airport upgrading project can be measured to assess performance of the project.

1.3 Project Logic

Resurfacing of the airport's runway and improving other airport facilities will allow for easier, more efficient, and safer access to the island, resulting in increased tourist and business travel to and from the mainland and additional jobs to the island. This is intended to translate into more dollars spent in the local economy for tourism-related businesses.

The evaluation will measure the following outcome, objective and impact indicators as outlined in the Project Logic developed by MCA-T:

(a) Outcome: Increase in travel through Mafia Airport:

- i) Total annual passengers arrivals – # (Dry season)
- ii) Total annual Passengers arrivals – # (Wet season)

(b) Objectives: Increase in investment and economic activities:

- i) Annual aggregate visitor spending - dry season (\$)
- ii) Annual aggregate visitor spending - wet season (\$)
- iii) Percentage of household¹ with Income Generating Activity (IGA)² - %

¹ A Household is defined as a one person or a group of people who normally live together and eat together as a family in one or several residential unit(s) or part of a residence/house, whether owned or rented.

iv) Number of stand-alone businesses³ (#)

(c) **Compact Goal:** Poverty reduction and economic growth

- Average annual household income per capita (\$)

The evaluation has been integrated into project planning and implementation (project cycle). The contract for rehabilitation and upgrading of Mafia Island Airport between MCA-T and the contractor (M/s Kuanta Insaat Taahhut Electronic Tur San Vetic AS of Turkey) was signed on 28th November 2011. The agreed construction period is twelve months (12). The contract is worth US\$ 10.354 million.

According to the evaluation design, it is expected that impacts on outcome indicators will start to be seen in at least one year after completion of the project. Follow-up data collection will be conducted one year and ten months after completion of the airport upgrade. This period is appropriate because airlines will need a long time to start exploiting the opportunity and tourist and traveler will also need a long time to respond to the more easier, efficient and safe access to the Island. Follow-up data collection during wet season will be conducted in April 2015. The final report of the evaluation will be submitted in August 2015.

2. EXPECTED BENEFICIARIES

The airport upgrade sub-project is geared to addressing the existing problem of access to the island as a result of poor condition of its airport and lack of feasible alternative transport options. The project is expected to benefit the people of Mafia including increase of tourists and tourists spending in the Island and the increase and growth of formal and informal businesses. The project is expected to benefit about 73,819 people residing in the Island.

The majority of the people in Mafia are (poor) subsistence farmers, primarily influenced by Coastal Swahili culture with strong religious and family ties. It is part of the “Swahili Coast” that comprises of Zanzibar, Mafia, Bagamoyo, Kilwa, Dar es Salaam and others.

Resurfacing of the airport’s runway and improving other airport facilities will allow for easier, more efficient, and safer access to the island, resulting in increased tourist and business travel to and from the mainland and additional job to the island. This translates to more dollars spent in the local economy for tourism-related businesses that will be catalyst for other economic activities in the Island.

Focus Group Discussions (FGDs) conducted during the baseline survey found out that all men and women participants who are the potential beneficiaries in Kilindoni, Kiegeani and Chole villages had **positive perception** of the project. They accepted the airport upgrade project and expressed a lot of expectations from the project.

Expected benefits of the airport upgrade project mentioned by FGD participants and Consultants analysis of the perceived benefits are as follows:

- Jobs during construction at the construction site and residences of contractor’s staff. This benefit had already been realized during the baseline survey data collection period because households at Kilindoni reported household members that were working at the site or residences of contractor’s residential houses.
- Market for selling cooked food to construction workers at the airport through food stalls established by people of Mafia at the site that did not exist before. Those operating the food stalls in turn buy raw food from mafia market/shops. This benefit had also been realized period because food stalls were already operating – selling food to the construction workers at the airport. A

² A “Household with IGA” is a household as defined above with at least one member owning a business within or outside the household. An IGA is any activity that generates income after some investment.

³ A Stand-alone business is an Income Generating Activity (IGA) established outside the household of the owner.

restaurant that had already been established to serve contractors staff at the airport was already the largest buyer of foodstuffs at Kilindoni Market.

- Market for souvenirs and other items that will be sold to tourists and other people for various businesses after construction. This benefit will come in the short term because visitors after the upgrade will spend some money.
- The expanded market will attract investors for various projects that will be a catalyst for establishment of many businesses including more hotels and residential houses. This benefit will be realized in the long run because it will take some time for investor to respond to the business opportunities.
- Employment opportunities at investments and businesses that will be created thereafter. This benefit will also be realized in the long run because it will take some time for investor to respond to the business opportunities.

One woman participant explained that,

“Currently there are very few shops around the Mafia airport even in Kilindoni town because there is no market; there are no shops for fish, food, mats, poultry because there are very few people in Mafia when the airport brings more people to Mafia, there will be more shops and businesses. We will be selling more (A woman participant)”

Mafia people can benefit from opening businesses at the airport such as selling mats and other curio shop products at the airport and other parts of Mafia. The expanded market will be a catalyst for people of Mafia to establish and engage in various businesses related to the tourism market such as pottery, mats and baskets making, and other curio shop products. It will create more market for fish, fruits and vegetable to tourists and the hotels/lodges. Business of renting accommodation to tourists will also increase. More specifically, woman participant at Chole Village said,

“When the existing hotels are full during high season some tourists rent rooms at residences of local people. Other tourists choose to live with community members to learn culture of people of Chole, including students. They participate in all activities including fetching water from wells that are far from residences..... They want to learn some activities such as mats making and hair plaiting for which they pay some US Dollars when they are directed how to do it..... Some traditional dances can also be arranged at the village and tourists can be invited where they will pay for the shows”

- The new airport can be a catalyst for construction of tarmac roads that will reduce current very high fare such as USD 1 to Utende (14 km) and USD 3 to Bweni (54 km) because of the rough roads and limited competition. Sometimes there may not be transport for coming back because it takes long time to travel through the rough roads.
- It was also expected that the above benefits will also contribute to improving education for children and food as well as general increase of quality of life for the people of Mafia Island.
- Travelling through the airport such as on medical emergence hence saving lives. One male participant explained that,



Female FGD Participants in Session

“Current airport services depend on daylight ending at 6 p.m. Increase of flights will increase access and availability of flights. Currently, even when a sick person needs emergence air evacuation in the evening, you must wait till next day, which results into deaths that could be avoided”

Use of the airport will also include:

- Travelling on normal travel due to affordable air fares because there will be more aircrafts and competition of airlines.
- The visit of Mafia children to the airport will be a an opportunity to learn modes of transport.
- The airport will also be used as entertainment for video/photographic activities such as video shooting purposes and wedding ceremony, watching aircrafts during flying off and touching down. However, they need education to change perception of some people of Mafia that they cannot be allowed to enter the airport and that it is not safe.

However, there is negative attitude towards access to the airport because of strong belief that it is not for locals. A story by one woman participants summarized their sentiment after she said in her own words,

“If you even standup at the airport to watch something, you will be pushed by security guards, how can we be allowed to do business there? ... we are very good makers of various curio shop products such as mats but do not have shops at the airport, if we send our wares there how will we be allowed to sell (them at the airport)?”

FGD participants mentioned other expected **challenges** such as disruption of culture and traditions such as dressing code and increase of criminals from various parts of the world. To emphasize security concerns, one adult male participant said that,

“Schools in Mafia have no security guards like in Dar es Salaam. Most houses have no security grills. When the airport brings many people the security situation is likely to change and even become worse”

Another challenge is that all companies come to Mafia with their own employees. One female participant said let the project come so that we can go there to search for jobs. However, there was almost unanimous opposition to her statement because most participants do not believe that can be possible for people (may be especially women). At another discussion, one male participant narrated that,

“It has been witnessed in many projects in Mafia including airlines, tourist hotels and construction of the sea landing site. They come with technicians, artisans and materials obtained outside Mafia. People of Mafia are left to be spectators..... there is high level of unemployment in the island..... Jobs given to Mafia people are of low cadre, especially watchmen. Even drivers and messengers including at Mafia District Council come outside Mafia while there is a lot of people with those capabilities. The District Council should prepare the people and act as an intermediary that will ask investors to give priority to Mafia people. ... Contracts in English should be translated to Kiswahili to enable Mafia people understand”



Male FGD Participants in Session

There is also a challenge of unfair competition between the hotels and villagers in providing services to the tourists. One male participant at Chole Village said,

“ all opportunities are protected and exploited by hotel investors. In 2006 I went to Donge area of Zanzibar where I found out that all boats that carry tourists are owned by

locals. In Mafia locals have to use tricks to carry tourists. We chase and try to outsmart each other (investors and villagers) like thieves”.

A woman participant echoed the same sentiments on market opportunities that,

“In the past management of the hotel by the owner, they were giving information that tourists will be visiting the village to learn and buy various goods. Villagers especially women were selling a lot of curio products, khanga, and fruits. After change into current management of the company that has rented the hotel all services are being provided by the hotel. These include boat and donkeys, which in the past were hired from villagers. In the past one villager was given a boat that he was a captain after the owner foreigner went back to his country. He run that business for some time but now has no business”

The increase of population following economic improvements may also lead to environmental degradation especially due to tree cutting for charcoal making, which was identified as one of current economic activities in every village.

FGD participants mentioned **what is needed** to enable people benefit more from the Mafia airport upgrade project. The capacity of people of Mafia should be strengthened. It should include:

- Need to be educated about potential benefits of the project that will prepare them on the opportunities.
- Education to prepare Mafia people to take jobs at the hotels because the job they qualify for is working as security guards. The secondary school is at Kilindoni (Kitomondo), which is very far for children from Utende and Chole. No student from the sub-village has ever passed to join high school. Education is needed, especially tourist related skills such as cooking for tourists, being a tour guide and languages such as English, Italian and others. They also need to be educated on businesses such as *how to prepare feasibility studies, book keeping, and know how to interact with tourists.* Quoting words of female FGD participants,

“I was not educated well because of poor attendance. Education was very poor in Mafia in recent past because there was only one secondary school – Kitomondo near Kilindoni. I was living in Chole, How could I afford to go to school daily? Just imagine if a woman is given a capital of TZS 1,000,000; She may not know how to budget it into various items such as transport capital and profit. Without education they will need to employ outsiders because tourists speak English. It is possible to be informally educated because one woman in Mafia studied under a tree and thereafter contested to be a Member of Parliament. If I will be educated I believe I can run an office”.

“One day some tourists wanted to speak with local people to know something. They could not communicate because locals did not know English Language. This is a very big barrier to exploitation of the tourist visits”

A male participant also underscored importance of education by example and said that,

“Owner of one of the beach lodges owned by a Mafia resident has joined studies at a vocational college recently established by a church organization at Kiegeani village with a view of increasing his capacity to manage and benefit from his investment. Without education Mafia people will not benefit from the airport upgrade”.

Other needs mentioned by FGD participants included:

- A business park (like Forodhani in Zanzibar?) or modern market for selling products to tourists and other people.
- Good market place for their products especially handcrafts (at the airport and Chole).

- Extension services to improve agricultural produce.
- Mafia residents should be given priority to get jobs and market.
- They need to be given affordable loans to run various projects and businesses because they have very small capital.
- Availability of electricity will facilitate businesses.
- Peace and tranquility to make the place safe to tourists hence attract more. The government must stand firm and seriously enforce laws to reduce theft incidences and enhance traditions and values.
- The Government should help Mafia people to benefit from their pieces of land such as making sure that instead of selling to investors, they should enter into joint venture so as to earn dividends during the lifetime of the project instead of onetime-selling benefit.

However, the baseline survey found some **negative cultural beliefs** that may limit people of Mafia to benefit from the project, especially in rural areas. There were no observed negative beliefs in relatively urbanized sub-villages. Participants were aware that there are no witchcraft beliefs at Kilindoni and Utende because there is mixture of people from all parts of the country and beyond that has brought new cultural practices, especially education and religious beliefs. The culture of indigenous people of Mafia allows cousins and even uncles to marry each other. This brings thinking that they are and they should be equal.

Negative cultural beliefs (in rural areas) include perceived jealous and witchcraft beliefs. According to FGD female participants,

“When people like us seize the opportunity to benefit from the project, some people will start to be jealous”

“Jealousness is rampant in the community. This is the main reason of underdevelopment. You can even be killed by witchcraft. Issues that cause hate and witchcraft include wearing good clothes, good houses that is thatched by iron sheets, or even when you cultivate more or when your rice thrives than others, birds can be sent by witchcraft to eat the rice in the farm while there isn't in neighboring farms. When your child comes back home and travels with you by air, she/he can be killed even if he/she stays away. One person bought a TV he died shortly. Beggars are more liked in the community. If you buy a tricycle (Bajaji) you die shortly. Most of the houses thatched by corrugated iron sheets were constructed by people who are now very old. People in rural areas have money but they cannot make development decisions”.

However, Chole Village women participants said such beliefs were declining such that people are making development projects such as construction of good houses without fear and they are in good health. The decline could be attributed by the increase in number of Chole people employed at the tourist hotel, interaction with tourists when they visit or live in local families. This was emphasized by male participants at their FGD where one participant said,

“Cultural beliefs that can limit individual, family and even community development are things of the past. The present Chole village community does not give chance to such beliefs. This is because of development challenges among the society and presence of immigrants”

On women freedom to participate in economic activities, women participants had a consensus that there is no cultural limitation because – as one woman participant put it:

“Women are free to engage in economic activities. Men want to marry women who engage in productive economic activities. They like them because when the man has no money income from wife saves the day. Those (women) who are lazy cannot get a man to propose marriage to them”.

3. PERFORMANCE EVALUATION DESIGN

3.1 Evaluation Questions

The evaluation design and subsequent data gathering activities will address the following key research questions:

- Has the Mafia Island Airport Upgrade Project contributed to easier, more efficient, and safer access to Mafia Island?
- Has the Mafia Island Airport Upgrade project contributed to an increase in (i) tourism and/or (ii) business travel?
- Has the Mafia Island Airport Upgrade project contributed to an increase in visitor spending on the island?
- Has the Mafia Island Airport Upgrade project contributed to an increase in economic and investment activities on the island? (Hotel, wildlife refuge, food industry, etc.)

3.2 Evaluation Methodology

Before carrying out the baseline survey the evaluation was designed and documented in a Concept Note that identified data needs and sources, prepared data collection instruments and protocols, and designed sampling, data collection, data entry and cleaning, analysis and dissemination plans. The evaluation will use **Before and After** comparison analysis because of lack of a counterfactual with similar observable and/or unobservable characteristics. **Table 1** summarizes the methodology.

Table 1: **Evaluation Methodology**

Activity	Evaluation Methodology	Intervention/ Treatment Group	Counterfactual: Comparison/Control Group	Key Outcomes and Impact
Mafia Island Airport Upgrade Project	Pre-post approach comparing outcomes from before and after implementation	Months after activity is completed	Months before activity begins	<ul style="list-style-type: none"> Increased total annual passenger arrivals Increased Annual Aggregate Visitor spending Increased Households with IGA Increased Stand-alone businesses Poverty reduction and economic growth (Increased average annual household income per capita)

The evaluation used both quantitative and qualitative data from primary and secondary sources as complements in an evaluation strategy. Therefore, the consultant used a “mixed-method” design that combined techniques traditionally labeled “quantitative” with those traditionally labeled “qualitative”. The choice was based on type of data to be collected, timeframe and nature of data source/respondents relevant for each type of data.

The evaluation design has three rounds of data gathering, analysis and dissemination comprising of the Baseline, Interim, and Follow-up evaluations. All the rounds will address the same evaluation questions. Each round will have two phases of data collection during wet and dry season, which will match with the tourism seasons.

Baseline status (April to August 2012) - has been established in this report with data collected when construction had just started.

Interim evaluation (April to August 2013) - will be an early check to determine what impact progress of the process and outputs have started to create on the Compact Goal (Poverty reduction and economic growth). At this stage, data will be collected and compared with the “before” baseline status to establish interim impact (if any). Findings will also be used to test features of the project to get bases for modifying/fine-tuning the project design with a view of improving effectiveness over time.

Follow-up/final/impact evaluation (April to August 2015) - will be conducted at least one year after completion of the Mafia Island Airport Upgrade Project. This will measure how the project has worked in the Mafia context and what lessons will be learned to inform next policy formulation. Recommendations of the evaluation will feed into policy making.

The Baseline Survey was a small effort collection of both quantitative and qualitative data as either secondary or primary data. Data was gathered in Dar es Salaam and Mafia Island, with the majority collected in the Island.

i) Secondary Data Collection

Secondary data was collected in Dar es Salaam and Mafia from the following institutions:

- Mafia District Council's DED data;
- Mafia Island Marine Park (MIMP) data;
- Tanzania Airports Authority (TAA) data – from Headquarters in Dar es Salaam;
- Tanzania Civil Aviation Authority (TCAA) data – from Headquarters in Dar es Salaam;
- Ministry of Livestock and Fisheries Development (MLFD) – from Headquarters in Dar es Salaam; and
- Compact and Project data from MCA-T in Dar es Salaam.

ii) Primary Data Collection

All primary data was collected in Mafia Island covering the following:

- Hotel Manager Survey;
- Hotel Guest Survey;
- Passenger Exit Survey;
- Village Leader Survey;
- Male Focus Group Interviews;
- Female Focus Group Interviews; and
- Individual Interviews.

The units of observation for the primary data collected were as follows:

Data	Unit of Observation
Secondary data	Institution
Hotel Manager Survey	Hotel Manager or Accountant
Hotel Guest Survey	Hotel Guest
Passenger Exit Survey	Mafia to Dar es Salaam Passenger
Village Leader Survey	Village/sub-village Leader
Male Focus Group Interviews	Male Community Members
Female Focus Group Interviews	Female Community Members
Individual Interviews	Individual Community Members

Data was entered and analyzed using SPSS software that produced outputs in other software such as Excel spreadsheets.

3.3 Sampling

All the sources of secondary data were visited and secondary data that was available was collected.

One of pre-requisites for effective pre-post evaluation method is collection of data from the same sources/respondents during all rounds of data collection. However, due to semi nomadic nature of fisher community, especially men and also attrition, a multiple cross sectional approach will be used instead of the ideal panel survey.

The sampling strategy comprised of 100% coverage or census for Hotel Manager Survey because all hotels and guest houses that receive tourists in the Island were interviewed. There was also 100% coverage or census for the Village Leader Survey (Listing) because the Consultant walked thoroughly through each village and sub-village covering all households. All exit passengers were also interviewed during the two data collection months. With regard to the Hotel Guest Survey, all guests found at the hotels were interviewed.

Sampling was only applied for selection of Focus Group Discussions (FGDs) participants who were also respondents for Individual Interviews. Purposive random sampling was used. Participants were randomly selected in collaboration with village and sub-villages leaders ensuring that participants come from all areas including both men and women. Other selection factors included being of the working age (18 to 60 years) with good mental health. The sample size for the Individual Interviews survey was small – covering all FGD participants - because the ToR required small data collection effort due to lack of a counterfactual.

Table 2 presents a summary of data sources, expected sample size and actual sample size for primary data.

Table 2: Sampling Plan and Data Collection and Processing Achievements

Item	Target Sample Size		Total Target Sample Size	Sample Coverage		Total Sample Coverage	Sample Coverage (Percentage)	Processed	Processing Achievement (Percentage)
	Wet Season	Dry Season		Wet Season	Dry Season				
Hotel Manager Survey	17	0	17	16	0	16	94%	16	100%
Hotel Guest Survey	275	275	550	175	298	473	86%	415	88%
Passenger Exit Survey	350	350	700	373	397	770	110%	729	95%
Village Leader Survey (Kilindoni, Utende and Chole)	18	0	18	21	0	21	117%	21	100%
Male Focus Group Interviews (Kilindoni, Utende and Chole)	3	0	3	3	0	3	100%	3	100%
Female Focus Group Interviews (Kilindoni, Kiegeani and Chole)	3	0	3	3	0	3	100%	3	100%
Individual Interviews	48	0	48	60	0	60	125%	60	100%
Average							105%		97%

Overall, the above table shows that the average sample coverage was 105% and data entry and processing yielded 97% of the expected sample.

The table shows that there were no differences between expected sample size and actual sample size for both male and female FGDs. The actual sample size for Hotel Manager Survey was lower than the expected sample size of 17 interviews by 1 interview or 6% because there were only 16 hotels and guest houses that accommodate tourists in Mafia. The actual sample size for Hotel Guest Survey was lower than the expected sample size by 77 interviews or 14% because there were few guests during wet season, which was mainly attributed to low tourism season (wet) during which guests are very few because, except for the tourist-cum business hotels at Kilindoni (District Headquarters), all beach hotels are technically closed during wet season from April to June of every year.

There was excess coverage for Passenger Exit Survey by 70 interviews or 10% because all passengers of a flight were given the questionnaires. And it turned out that all passengers of flights of the last field work day filled the questionnaires. The village leader's survey had excess of three interviews out of the expected 18 interviews (17% excess) because there were more sub-villages than

it was expected during the evaluation design. Some sub-villages had been split as part of Local Governments' re-organization. Moreover, individual interviews had an excess of 12 interviews or 25% because the Consultant after learning in the field that there was adequate time, decided to interview 10 interviews instead of 8 individuals for each sub-village.

Data entry and processing achieved 97% of data collected (sample covered) because some badly filled questionnaires were dropped during consistency checks and editing. The problem of incomplete filled survey questionnaires was largely attributed to tourists rush to go with fellow tourists that were not ready to wait (in a car or boat) for tourists that were still being interviewed. Some hotel guests rush to go without filling the last Question Number 12 on expenditure. The Consultant supervised hotel guest survey but could not force guests to complete interviews. The issue happened more during the dry season because hotel guests were in large groups that had to be interviewed by one enumerator.

Badly or incorrectly filled questionnaires were on Passenger Exit Survey that was filled by the passengers on their own while airborne without any supervision. In this case incomplete or incorrectly filled interviews could not be caught in the field prior to data entry. Question Number 12 on expenditure was affected than other questions. It seems that some groups of passengers ganged not to reveal expenditure. Some package tourists filled unrealistic cost of the package. For instance, a tourist could fill stay of 6 days and spend on a package of all services of USD 50. Such issues could not be caught in the field prior to data entry because filled questionnaires were collected in Dar es Salaam while the Consultant was in Mafia.

4. BASELINE DATA

4.1 Summary statistics

The summary statistics for baseline values of all outcome and goal indicators are as shown in *Table 3*.

Table 3: **Summary Statistics**

Indicator Category	Variable	N	Minimum	Maximum	Mean	Std. Deviation	2007	2008	2009	2010	2011
Outcome	Total annual passengers arrivals – # (Dry season)	5	2,334	3,641	3,297	543	2,334	3,478	3,641	3,464	3,570
	Total annual Passengers arrivals – # (Wet season)	5	1,393	2,361	2,091	420	1,393	2,349	2,355	2,361	1,997
Goal	Average annual household income per capita (USD)	298	0	18,994	452.38	1,535.867					

Source: Outcome based on Tanzania Airport Authority (TAA) and the 2012 Baseline Individuals Survey

However, it should be noted that passengers' arrivals during the intermediate season with mixed rain and dry spells (November, December, January and February) are not included because that season is not part of the evaluation logic/design. Therefore, the sum of year by year figures for the two seasons (dry and wet) are less than annual totals in *Table 15*. The Goal indicator was calculated based on the 2012 Baseline Individuals Survey data that had no a five year trend.

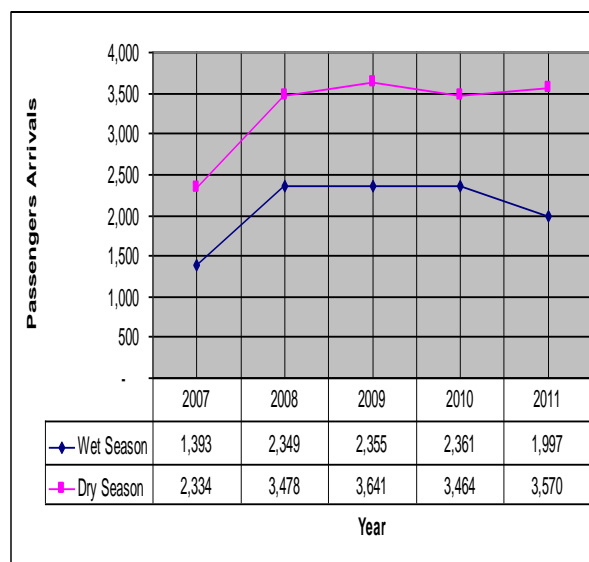
4.2 Outcome, Objective and Goal Indicators

The Baseline Survey has established outcome, objective and compact goal indicators as follows:

a) **Outcome:** Increase in travel through Mafia Airport:

Data from TAA shows that the total annual passenger arrivals at Mafia airport for the two seasons during the past five years (2007 – 2011) were as shown in **Figure 1**. The figure shows that, except for a decrease between 2009 and 2010, there was increase of annual passenger arrivals at Mafia airport during dry season. Data on overall passenger movement from TAA website indicate that number of passengers in Tanzania was increasing except between 2008 and 2009 when the volume of air travel in the country fell from 2,118,694 passengers to 1,970,656 passengers. This was attributed to effects of the world economic crisis that forced people to cancel some travelling. It seems that Mafia took longer to recover than the general passenger movements in the country. It took sometime to clear contracts that could not be cancelled because they were already paid for, especially for package visits. The Tanzania National Economic Survey (2011) reported decrease of visitors to Tanzania National Parks from 678,975 in 2009 to 671,886 in 2010, which was attributed to the world economic crunch. The figure further shows that passengers arrivals during wet season increased between 2007 and 2008 before being stagnant from 2008 to 2010 followed by a decline between 2010 and 2011.

Figure 1: **Outcome Indicator**



The average indicators as calculated in **Table 3** are as follows:

- Annual Passengers Arrivals at Mafia Airport – Dry season - **3,297 passengers**.
- Annual Passengers Arrivals at Mafia Airport – Wet season - **2,091 passengers**.

Passengers' arrivals during the intermediate season with mixed rain and dry spells (November, December, January and February) are not included because that season is not part of the evaluation logic.

Table 4 shows that according to the 2012 Baseline Passenger Exit Survey there were more male than female travelers during both wet and dry seasons. Overall, the table establishes that 63% of passengers exiting Mafia Island during wet season were male (37% were female). During dry season, 59% of passengers exiting were male and 41% were female. The occupation of exiting passengers show that except for a few volunteers and those who could not state their occupation, all were in formal employment implying that they had at least secondary up to higher education. Education statistics in Tanzania indicate that the number of women decreases as the level of education increases. Therefore, there were more male than female travelers because there are more educated men than women in the country making men dominate formal employment.

Table 4: **Gender Distribution of Travelers**

Category	Wet Season			Dry Season		
	Male	Female	Total	Male	Female	Total
Passengers Exit	235	138	373	209	147	356
%	63%	37%	100%	59%	41%	100%

Source: The 2012 Baseline Passenger Exit Survey

b) **Objectives:** Increase in investment and economic activities:

- i) Annual aggregate visitor spending - dry season - is **USD 2,284,556..**
- ii) Annual aggregate visitor spending - wet season – is **USD. 1,019,082**

The above two indicators are calculated in Section 4.3.3 by multiplying the average exit passengers' spending with the annual average number of visitors during the particular season. Summary descriptive statistics are given in that section. Visitors' spending during the intermediate season with mixed rain and dry spells (November, December, January and February) are not included because that season is not part of the evaluation logic.

- iii) Percentage of household with Income Generating Activity (IGA) - **47%**

This indicator has been established in **Table 5** as follows:

Table 5: **Percentage of Households with IGAs**

(a) Number of Households Surveyed:	
Village	No. of Household
Kiegeani	653
Chole	226
Kilindoni	2,457
Total	3,336
Household with IGAs in the 3 villages	1,572
Percentage of household with IGAs	47%

Source: The 2012 Baseline Village Leader Survey (Listing of IGAs)

- iv) Number of stand-alone businesses (**957**)

Section 4.3.4 has established that there were *957 Stand-alone businesses* or 52% of the IGAs.

c) **Compact Goal:** Poverty reduction and economic growth

Poverty reduction and economic growth has been measured by “*average annual household income per capita*”. Through interview of individual household members in the three villages of Mafia, the study found out that the average annual household income per capita was USD 452 as shown in **Table 6**. This is about USD 1.24 per day, which is just above the poverty line. Comparison with findings of recent national surveys (HBS and PHDR) is presented in Section 4.3.6.

The sources of income that contributed most to the total income in the three villages covered by the baseline survey were led by income from non-farm self employment (Business) with a total of USD 54,158 followed by income from crop production (USD 34,817), income from fishing (21,375), imputed rent of owner occupied dwellings was fourth followed by Income from employment (in cash) while Rent received was sixth followed by other sources of income as shown in the table. Existence of business, employment and rental income among top sources of income indicates that Kilindoni, Kiegeani and Chole villages largely comprise semi-urban areas with tourism contributing to employment opportunities.

The table also shows high and low paying sources of income (occupation). It reveals that the average income per person (respondent) was highest from fishing (USD 1,424.99) followed by income in cash from employment (USD 1,376.76), income from non-farm self employment (Business) – USD 1,320.92, followed by income from crop production (USD 696.34), income from livestock (USD 690.45) and then other sources of income.

Average income per quarter as shown in the table reveals that most of the income (USD 266) was earned in the fourth quarter when there are more visitors to the Island as shown in Section 4.3.2 followed by third quarter

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(USD 225) when there are also more visitors to the Island, then first quarter (USD 195) and second quarter that had the least income (USD 188) but more cases of income sources (151) than the first and third quarters, implying that people of Mafia struggle to get income during the wet season when the number of visitors arrivals at the airport decline as shown in said section.

Table 6: **Household income earned by members of the household**

USD											
Source of income	1 st Quarter		2 nd Quarter		3 rd Quarter		4 th Quarter		Total		Average
	N	Sum	N	Sum	N	Sum	N	Sum	N	Sum	
Income from employment (in cash)	3	708	3	708	3	708	5	4,761	5	6,884	1,376.76
Income from employment (in kind)	1	38	1	29	1	57	1	38	1	163	162.53
Income from non-farm self employment (Business)	39	11,983	41	11,508	40	15,447	41	15,220	41	54,158	1,320.92
Income from crop production	43	7,531	43	7,329	43	8,621	50	11,337	50	34,817	696.34
Income from livestock	3	701	3	290	3	653	4	1,117	4	2,762	690.45
Income from fishing	14	5,295	15	5,555	14	5,311	14	5,213	15	21,375	1,424.99
Imputed rent of owner occupied dwellings	34	1,336	33	1,275	34	1,370	36	4,028	37	8,009	216.47
Interests	0	.	0	.	0	.	1	159	1	159	159.35
Dividends	0	.	0	.	0	.	1	255	1	255	254.96
Rent received	6	1,027	6	1,027	6	1,027	6	1,027	6	4,107	684.56
Current transfers and other benefits received	2	115	2	229	2	124	1	19	2	488	243.80
Income from forest products (wood, charcoal, honey, fruits, herbs, etc)	4	289	4	416	4	467	4	461	4	1,633	408.25
Total	149	29,022	151	28,366	150	33,785	164	43,636	167	134,810	807.24
Average per source of income		194.78		187.85		225.24		266.07		807.24	
Population in Households Covered										298	
Average annual household income per capita (USD)										452.38	

Source: The 2012 Baseline Individuals Survey

The baseline survey found out that, on average, male headed households were earning near twice the average income of female headed households as shown in **Table 7**. All indicators in the table, namely average per source of income, average household income, and average household income per capita indicate income of female headed households were lower than that of male headed households in every quarter of the year. The finding confirms that female headed households are more vulnerable to poverty than male households. It seems that although women are encouraged to work and earn income as revealed by FGDs, they do not earn as much as men. **Tables 30** and **31** show that women do low paying work compared to men. For instance, there are more women in selling fried fish while fishing, which is the most paying as shown in **Table 6**, is dominated by men. The community service sector is dominated by men. Retail shops are dominated by men while women are in low paying roadside stalls Distribution of resources and decision making processes favour men, especially in communities like Mafia where traditional practices are still entrenched as explained by participants of the study (Section 2).

Table 7: Household income by gender of Head of Household

Source of income	1st Quarter				2nd Quarter				3rd Quarter				4th Quarter				Total Income					
	Male headed		Female headed		Male headed		Female headed		Male headed		Female headed		Male headed		Female headed		Male headed			Female headed		
	Valid N	Sum	Valid N	Sum	Valid N	Sum	Valid N	Sum	Valid N	Sum	Valid N	Sum	Valid N	Sum	Valid N	Sum	Valid N	Sum	Mean	Valid N	Sum	Mean
Income from employment (in cash)	3	708	0	.	3	708	0	.	3	708	0	.	5	4,761	0	.	5	6,884	1,377	0	.	.
Income from employment (in kind)	0	.	1	38	0	.	1	29	0	.	1	57	0	.	1	38	0	.	.	1	163	163
Income from non-farm self employment (Business)	32	10,826	7	1,157	34	10,418	7	1,090	33	13,831	7	1,616	34	13,862	7	1,358	34	48,937	1,439	7	5,220	746
Income from crop production	37	6,763	6	768	37	6,519	6	809	37	8,082	6	539	44	10,671	6	666	44	32,035	728	6	2,782	464
Income from livestock	3	701	0	.	3	290	0	.	3	653	0	.	4	1,117	0	.	4	2,762	690	0	.	.
Income from fishing	14	5,295	0	.	15	5,555	0	.	14	5,311	0	.	14	5,213	0	.	15	21,375	1,425	0	.	.
Imputed rent of owner occupied dwellings	28	1,103	6	233	27	1,041	6	233	28	1,137	6	233	30	3,795	6	233	31	7,076	228	6	933	156
Interests	0	.	0	.	0	.	0	.	0	.	0	.	0	.	1	159	0	.	.	1	159	159
Dividends	0	.	0	.	0	.	0	.	0	.	0	.	1	255	0	.	1	255	255	0	.	.
Rent received	3	922	3	105	3	922	3	105	3	922	3	105	3	922	3	105	3	3,687	1,229	3	421	140
Current transfers and other benefits received	0	.	2	115	0	.	2	229	0	.	2	124	0	.	1	19	0	.	.	2	488	244
Income from forest products (wood, charcoal, honey, fruits, herbs, etc)	4	289	0	.	4	416	0	.	4	467	0	.	4	461	0	.	4	1,633	408	0	.	.
Total Income	124	26,606	25	2,416	126	25,870	25	2,496	125	31,111	25	2,674	139	41,057	25	2,579	141	124,644	884	26	10,166	391
Average per source of income		215		97		205		100		249		107		295		103		884			391	
Number of Households		52		8		52		8		52		8		52		8		52			8	
Average Household Income		512		302		497		312		598		334		790		322		2,397			1,271	
Population in Households Covered		256		42		256		42		256		42		256		42		256			42	
Average household income per capita		104		58		101		59		122		64		160		61		487			242	

Source: The 2012 Baseline Individuals Survey

The status of baseline household income is compared with findings of recent national surveys, namely Household Budget Survey (HBS) and Poverty and Human Development Report (PHDR) in Section 4.3.6.

However, the baseline survey has also measured the Compact Goal using ownership of assets and food poverty as proxy of poverty indicators at micro level because they are used by the National Bureau of Statistics (NBS) in Household Budget Survey and Tanzania Poverty Monitoring Framework.

Table 8 shows distribution of assets owned. The table shows that the number of assets owned was higher than the number of households owning that type of asset, indicating that some households owned more than one asset of the same type.

Asset with least ownership was landline telephone (1.7% of households) that is being largely replaced by technological development, especially the introduction of mobile phones and the Internet as well as recent convergence of ICT services such that both data and voice are obtained from each device. Other assets owned by few households include refrigerator (10.0% of households), Sofas (11.7% of households), boat/canoe (13.3% of households), and television (16.7% of households). This is also correct because of limited electricity access in the Island and being high cost assets. The table also indicates that a higher proportion among female headed households owned three (refrigerator, television and sofas) out of the five Mafia rare assets better than the proportion among male headed households. Therefore, although average per source of income, average household income, and average household income per capita indicate income of female headed households were lower than that of male headed households as shown in **Table 7**, it seems that women in the Island give priority to buy assets that improve their households quality of life than men. The little income of women is wisely spent.

Assets owned by most households included mosquito nets (100.0% of households) followed by beds (98.3%) the same as cooking and crockery utensils (98.3%), tables (95.0%), mobile phones (88.3%) and then chairs (85.0%). This position is in line with national campaigns such as recent promotion and Government-donor support to ensure every bed in the country has a mosquito net. The finding is in line with ESRF mobile phone study (2011) that about 89% of Tanzanians owned mobile phones. Except for chairs the position of female headed households with regard to ownership of these popular assets was almost similar to male headed households.

The proportion of households owning hand hoe was 80.0%, slightly lower than the 2002 population census figure for Mafia - 84.49%, because the survey was done at Kilindoni, Kiegeani and Chole villages that comprise semi-urban areas and fisher communities.

With regard to ownership of capital assets, the baseline survey has established that the proportion among female headed households that own such assets is lower than the proportion among male headed households. For instance, the table shows that proportions for boat/canoe ownership are 0.0% for female headed households against 15.4% for male headed households; livestock ownership (25.0 % for female headed households against 40.4% for male headed household); bicycle ownership (25.0 % for female headed households against 51.9% for male headed household), and even hoes (62.5% for female headed households against 82.7% for male headed household). Therefore, women are deprived of the means of production for the most paying sources of income that contribute lion's share of the income of Mafia. This could be the main reason for the average per source of income, average household income, and average household income per capita of female headed households to be lower than that of male headed households.

Table 8: Ownership of assets

Type of asset	Male Headed Households (52)			Female Headed Households (8)			Total Households (60)			Female Headed Households Compared with Male
	Number of assets owned	No. of households owning the asset	As % of Total Households	Number of assets owned	No. of households owning the asset	As % of Total Households	Number of assets owned	No. of households owning the asset	As % of Total Households	
Radio and Radio Cassette	48	35	67.31%	4	4	50.00%	52	39	65.0%	Lower
Telephone (land line)	1	1	1.92%	-	0	0.00%	1	1	1.7%	Lower
Mobile phone	74	46	88.46%	10	7	87.50%	84	53	88.3%	Same
Refrigerator or freezer	4	3	5.77%	3	3	37.50%	7	6	10.0%	Higher
Television	8	7	13.46%	3	3	37.50%	11	10	16.7%	Higher
Chairs	116	45	86.54%	11	6	75.00%	127	51	85.0%	Lower
Sofas	8	5	9.62%	2	2	25.00%	10	7	11.7%	Higher
Tables	107	49	94.23%	18	8	100.00%	125	57	95.0%	Same
Beds	156	51	98.08%	25	8	100.00%	181	59	98.3%	Same
Cupboards, chest-of-drawers, boxes, wardrobes, bookcases	25	17	32.69%	5	4	50.00%	30	21	35.0%	Higher
Lanterns	31	26	50.00%	3	2	25.00%	34	28	46.7%	Lower
Cooking pots, Cups, other kitchen utensils	51	51	98.08%	8	8	100.00%	59	59	98.3%	Same
Mosquito net	187	52	100.00%	30	8	100.00%	217	60	100.0%	Same
Iron (Charcoal or electric)	12	12	23.08%	2	2	25.00%	14	14	23.3%	Same
Bicycle	39	27	51.92%	2	2	25.00%	41	29	48.3%	Lower
Boat/canoe	8	8	15.38%	-	0	0.00%	8	8	13.3%	Lower
Livestock	146	21	40.38%	17	2	25.00%	163	23	38.3%	Lower
Fields/Land	38	38	73.08%	6	6	75.00%	44	44	73.3%	Same
House(s)	44	41	78.85%	7	6	75.00%	51	47	78.3%	Same
Hoes	92	43	82.69%	9	5	62.50%	101	48	80.0%	Lower
Other	47	26	50.00%	9	5	62.50%	56	31	51.7%	Higher
Total	1,242			174			1,416			

Source: The 2012 Baseline Individuals Survey

Table 9 presents housing condition during the baseline survey. It indicates that about 57% of the main houses of households covered by the survey had no foundation. Households with main houses with foundation constructed using concrete, cement bricks, burnt bricks, stones in cement or in lime-mortar were just 18% of all households, which was higher than the 2002 population census figure for Mafia - 9.74%, because the survey was done at Kilindoni, Kiegeani and Chole villages that comprise semi-urban areas. The proportion of households with main houses with walls constructed using concrete, cement, or stone was also 18% as shown in the table. Households with main houses roofed using Metal sheets (GCI) were 27% of all the households, which was higher than the 2002 population census figure for Mafia - 18.49%, because the survey was done at Kilindoni, Kiegeani and Chole villages that comprise semi-urban areas.

Overall, the proportion of households with better foundation, wall and roof condition was higher among female headed households than among male headed households as shown in the table.

Table 9: Main House Condition

(a) Main household house foundation type:									
Type	Male Headed	%	Female Headed	%	Total	%			
No foundation	32	62%	2	25%	34	57%			
Stones in mud-mortar	8	15%	0	0%	8	13%			
Stones loosely laid	2	4%	0	0%	2	3%			
Concrete, cement bricks, burnt bricks, stones in cement or in lime-mortar	7	13%	4	50%	11	18%			
Others (specify)	3	6%	2	25%	5	8%			
Total	52	100%	8	100%	60	100%			
(b) Main household house wall type:									
Type	Male Headed	%	Female Headed	%	Total	%			
Poles (including bamboo), branches, grass	26	50%	2	25%	28	47%			
Poles and mud/mud and stones	14	27%	1	13%	15	25%			
Mud only	4	8%	1	13%	5	8%			
Mud bricks	0	0%	1	13%	1	2%			
Concrete, cement, stones	8	15%	3	38%	11	18%			
Total	52	100%	8	100%	60	100%			
(c) Main household house roof type:									
Village	Male Headed			Female Headed			Total		
	Grass, leaves, bamboo	Metal sheets (GCI)	Total	Grass, leaves, bamboo	Metal sheets (GCI)	Total	Grass, leaves, bamboo	Metal sheets (GCI)	Total
Kilindoni	7	7	14	1	5	6	8	12	20
Kiegeani	18	1	19	1	0	1	19	1	20
Chole	16	3	19	1	0	1	17	3	20
Total	41	11	52	3	5	8	44	16	60
%	79%	21%	100%	38%	63%	100%	73%	27%	100%

Source: The 2012 Baseline Individuals Survey

With regard to food security, **Table 10** shows that there were no household taking only one meal per day. That situation is better than findings of the Household Budget Survey (2007) that reported 1% of the households were taking only one meal per day. The table further shows that there were a high proportion of households taking two meals per day (43%) compared with 40.5% findings of HBS (2007). However, 57% of the households taking three meals per day during the baseline survey (57%) were slightly lower than the 58.3% of HBS (2007).

Table 10: Number of meals household usually gets

Income ranges	Male Headed			Female Headed			Total		
	2	3	Total	2	3	Total	2	3	Total
Below 1,000	6	9	15	2	1	3	8	10	18
1,000 - 1,999	7	9	16	3	1	4	10	10	20
2,000 - 2,999	5	6	11	0	0	0	5	6	11
3,000 - 3,999	1	1	2	0	1	1	1	2	3
4,000 - 4,999	0	3	3	0	0	0	0	3	3
5,000+	2	3	5	0	0	0	2	3	5
Total	21	31	52	5	3	8	26	34	60
%	40%	60%	100%	63%	38%	100%	43%	57%	100%

Source: The 2012 Baseline Individuals Survey

4.3 Baseline Status of Key Evaluation Questions

The key research questions of the evaluation given in Section 3.1 address the following thematic areas or critical issues for the evaluation:

- Travel safety and efficiency (Research Question No. 1);
- Tourism and business travel (Research Question No. 2);
- Visitor spending by tourism and business (Research Question No. 3);
- Economic and investment activities on the island (Research Question No. 4); and

The evaluation will also establish how the Mafia Island Airport Upgrade project will contribute to attainment of the Compact goal as measured by Household income.

4.3.1 Travel safety and efficiency

The first question of the research seeks to establish whether the Mafia Island Airport Upgrade Project will contribute to easier, more efficient, and safer access to Mafia Island.

Table 11 presents aircraft movement (flights) data from TAA. It shows that the average number of annual aircrafts that landed at Mafia airport during the period reviewed was 1,459 aircrafts. Therefore, the average number of flights per day was four (4). During the baseline survey there were three (3) scheduled flights – two were operated by Coastal Travels and one was operated by Tropical air. There were unscheduled flights, especially during the high tourism season (dry season). The airport was being served mostly by Cessna 208 and 206 aircrafts that carry 14 and 5 passengers, respectively. Although there were no discussions with airlines, it is expected that the tarmac runway will attract bigger and more cost efficient aircrafts that were already existing in Tanzania such as ATR 42 (44 to 50 passengers) and ATR 72 (62 to 74 passengers) that were being used by Precisionair between Dar es Salaam and other airports during the baseline survey. Flying time will also decrease down from the 30 minutes of Cessna 208 and 206 aircrafts. Decrease of tariffs due to competition and introduction of larger and more cost efficient planes will enable those who could not afford the average tariff of about USD 80 one-way to fly easily for 30 minutes instead of travelling aboard traditional sailing dhows via the Kisiju and Nyamisati villages of Rufiji delta for about two days from the mainland, or aboard on a small motorized boat for eight hours (also via the Kisiju and Nyamisati villages).

Table 11: Aircraft Movements to Mafia Airport

Year	Intermediate		Wet Season				Dry Season				Intermediate		Total	Growth
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
2007	124	123	97	75	70	91	130	170	112	125	118	138	1,373	-
2008	138	126	123	74	99	103	145	172	146	130	138	133	1,527	11%
2009	126	110	121	94	85	109	181	141	134	151	131	143	1,526	0%
2010	130	136	136	94	88	110	128	142	104	131	124	121	1,444	-5%
2011	131	126	110	82	79	107	124	134	109	131	119	142	1,394	-3%
2012	133	130	121	109	83	111	126	133	-	-	-	-	946	-
Average aircraft arrivals	130	125	118	88	84	104	142	152	121	134	126	135	1,459	-
%	9%	9%	8%	6%	6%	7%	10%	10%	8%	9%	9%	9%	100%	1%
Season #			394				548				517			
%			27%				38%				35%		100%	

Source: Tanzania Airport Authority (TAA) Secondary Data of the 2012 Baseline Survey

According to the Inspectorate of Air Accidents at the Ministry of Transport, there have been no reportable accidents around Mafia Airport for the years 2007 – 2012. Most of the aircraft accidents took place in the 1980s, 1990s and early 2000s. Previously, some military accidents occurred during the First World War (WWI). **Table 12** shows accidents and incidents at Mafia Airport since 1915. The appendix shows that there were ten (10) accidents/incidents during the 97 years (1915-2012), almost a century. A number of accidents involved heavy landing pointing to the possibility of wind shear or cross winds. There were also landing gear collapse accidents reflecting the bumpy, pot-holed runway. However, since introduction of the Cessna 208 or (Cessna Caravan I) in the early 2000s, there have been no accidents at Mafia – mainly because the aircraft is built to withstand such loads. Nevertheless, lack of accidents post year 2000 is also attributed to improved airport repair and maintenance.

Table 12: Mafia Air Accidents and Incidents⁴

S/No.	Aircraft Type and Registration	Date and Time (UTC)	Location	Circumstances of Accidents/incidents
1.	SOPWITH 807921	24.02.1915	Niororo Island, Mafia	Aircraft force-landed following engine failure
2.	Henry Farman AS/8/HF	June 1915	Vunjanazi Aerodrome, Mafia	Crashed on landing – completely written-off.
3.	CAVDRON G.III	June 1915	Vunjanazi Aerodrome, Mafia	Not known
4.	CAVDRON G.III	11.07.1915	Vunjanazi Aerodrome, Mafia	Aircraft overturned on landing. Aircraft destroyed. Pilot error.
5.	Cessna 402B 5H-TZN	30.10.1987	Mafia Airport	Nose wheel separated on landing. Landing gear collapsed. Cotter pin missing in the installation following tire change.
6.	Cessna 402B 5H-TZN	16.05.1991	Mafia Airport	Left main landing gear collapsed during the landing roll.
7.	PA28-140 5H-MTG	6.06.1996	Mafia Airport	Right main landing gear sunk in a ditch causing the right wing tip to strike the ground.
8.	Cessna 402B 5H-SKX	18.08.1996	Mafia Airport	Right main landing gear collapsed following heavy landing.
9.	PA34-200 5H-JET	24.05.2000	Mafia Airport	Damage to wing structure following heavy landing.
10.	Cessna 421 5H-KSN	8.06.2003	Mafia Airport	Following an aborted take-off, the aircraft overrun the end of the runway. Nose landing gear struck a trench and collapsed.

Source: Accident Investigation Branch, Ministry of Transport - Secondary Data of the 2012 Baseline Survey

⁴ **Accident** is an intentional mishap event that leads to injury, death or property damage while **incident** is a disturbance event that did not cause injury, death or property damage.

Safe access to Mafia Island airport was also assessed using daily checklist inspections of the airport by the airport management, which is based on Tanzania Civil Aviation Authority (TCAA) guidelines reflecting compliance to the basic International Civil Aviation Organization (ICAO) standards. One of the checklists that had information typical during the survey is given as **Table 13**. Deficiencies⁵ included unclear markings, inadequate signs, lack of lighting and presence of birds and wild animals. These are some of the deficiencies, which the airport upgrade project will address.

Table 13: Checklist for Inspection of Aerodrome Movement Areas – 25th July 2012

1. Runway (RWY)			
Item	RWY 15/33		
Surface condition	Good gravel surface		
Markings	Good but need repaint		
Presence of water	NIL		
Presence of dead birds or animals	NIL		
Concentration of Birds	FEW		
RWY Threshold Markings	Needs grass cutting and cleaning		
2. RWY Strips			
Item	RWY 15/33		
Status of grass	Need to be cut parallel to the runway		
Presence of water	NIL		
Presence of birds and wild animals	Stray dogs/homeless dogs are many		
Wind sock	Good		
3. Taxway (TWY)			
Item	TWY A	TWY B	
Surface Condition	Not Good	Good	
Markings	Not Clear	No Markings	
Shoulder	Need repaint	Good	
Presence of water	NIL	NIL	
Signage	No Signage	No Signage	
4. Apron			
Item	Main	Remarks	
Surface Status	Good but with potholes	Needed to be refilled	
Presence of sand, stones and loose objects	In some parts	Need to be collected	
Presence of water	NIL	NIL	
Vehicle operations	NIL	Needed	
Signage	NIL	Needed	
Apron Lighting	NIL	Needed	

Source: Mafia Airport - Secondary Data of the 2012 Baseline Survey

4.3.2 Tourism and business travel

This baseline survey is the first study to collect and document data of tourism in Mafia. During evaluation design consultation with stakeholders and literature revealed that there is no reliable statistics on tourists that visit Mafia (Holberg, 2008). Only the Marine Park collects data because all visitors are registered at the park gates where they to pay fees per day (which may result in double or

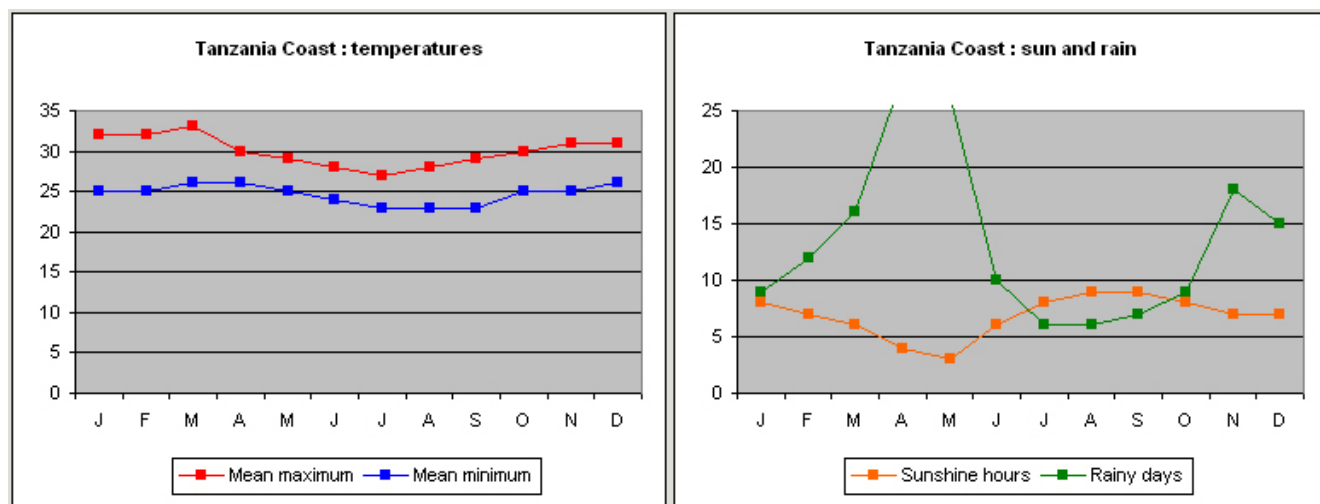
⁵ A **deficiency** is a situation where a facility, service or procedure does not comply with a regional air navigation plan approved by the Council, or with related ICAO Standards and Recommended Practices, and which situation has a negative impact on the safety, regularity and/or efficiency of international civil aviation.

more counting for individual tourists who return). But some tourists stay outside the Park and are therefore not registered by MIMP. Consultation with the Ministry of Natural Resources and Tourism and Tanzania Tourist Board (TTB) during scoping of this assignment revealed that they do not collect any data on Mafia tourism. They avoid double counting because they believe tourists visit Mafia after safari on the mainland. However, they indicated interest on data of tourists visiting Mafia first before other attractions or Mafia alone. Tanzania Tourism Sector Survey including the 2009 International Visitors' Exit Survey carried out by the National Bureau of Statistics (NBS) in collaboration with the Bank of Tanzania (BoT) also does not include tourism in Mafia. The monthly Hotel Statistics Survey by NBS (latest April, 2011) does not provide data for Mafia. Household Budget Survey data and the National Informal Sector Survey (Tanzania Mainland), The Planning Commission and the Ministry of Labour and Youth Development (UNDP/ILO) in 1991 do not include data for Mafia. Data from Tanzania Investment Center (TIC) only cover projects registered by the center.

The second key research question for Mafia airport upgrade project is: Has the Mafia Island Airport Upgrade project contributed to an increase in (i) tourism and/or (ii) business travel?

The evaluation adapted to the Mafia context, especially business seasonality that is largely influenced by wet and dry seasons. Mafia Island has bimodal rainfall climate of Tanzania coastal climate. The rain or wet season spans from mid March to June, the dry season runs from July to October, and there is an intermediate season characterized mixed periods of low rainfall and dry spells every year as shown in **Figure 2**. All the two climate trends in the figure reveal that there are three climatic seasons in Mafia.

Figure 2: **Tanzania Coastal Climate**



Source: www.africatravelresource.com/africa/tanzania/c/mafia/guide/mafia-island-holidays/

Data from TAA on total annual passenger arrivals at Mafia airport - disaggregated by month and season in **Table 14**, show that average passenger arrivals during the wet season range from 444 passengers in April to 679 passengers in March. Average passenger arrivals during the dry season range from 661 passengers in September to 915 passengers in August. The table also indicates that the average passenger arrivals during the intermediate season range from 794 passengers in November to 994 passengers in December, which is the mode. On average, the table shows that about 2,114 or 24% of total passengers (2,091 when 2006 figures are excluded) arrive at Mafia airport during wet season (March to June), 3,297 or 37% of total passengers arrive during dry season (July to October), and 3,484 or 39% of total passengers arrive during the intermediate season (November to February). Therefore, it has been established that most of the travel by air to Mafia is during the intermediate season, which is also the major holiday season throughout the world. However, there is very slight

difference between passenger arrivals during the dry season (37%) and passenger arrivals during the intermediate season (39%).

Table 14: **Passenger Arrivals at Mafia Airport**

Year	Intermediate		Wet Season				Dry Season				Intermediate		Total	Growth
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
2007	550	600	363	326	283	421	618	727	374	615	609	867	6,353	-
2008	705	702	673	480	632	564	920	936	823	799	833	872	8,939	40.7%
2009	889	841	817	507	496	535	1,081	892	734	934	799	998	9,523	6.5%
2010	905	994	833	461	479	588	893	986	654	931	850	1,097	9,671	1.6%
2011	983	1,093	685	354	363	595	838	1,036	722	974	897	1,136	9,676	0.1%
2012	966	927	701	538	392	615	935	941	N/A	N/A	N/A	N/A	6,015	-
Average per Month	833	860	679	444	451	541	870	915	661	851	798	994	8,896	12.2%
%	9%	10%	8%	5%	5%	6%	10%	10%	7%	10%	9%	11%	100%	

Source: Tanzania Airport Authority (TAA) Secondary Data of the 2012 Baseline Survey

The table also indicates that during the period reviewed, annual passenger arrivals at Mafia airport grew continuously from 6,353 passengers in 2007 to 9,676 in 2011. The table also shows that the average annual passenger growth rate registered during the five years is 12.2%. However, when the outlier figure of 40.7% registered in 2007/28 is excluded, the average annual passenger growth rate is 2.7%. Since the airport upgrade is expected to attract more airlines, more aircrafts including bigger than that were serving the airport during the baseline, there will be more competition among airlines that is likely to push down tariffs.

The trend of passenger arrivals at Mafia airport during the period under review (January 2007 to August 2012) is graphically presented in **Figure 3**, which is based on data in **Table 14**. The trend for all the six years has pattern similar to the pattern of rain seasons in **Figure 2**. The figure below confirms that there is very slight difference between passenger arrivals during the dry season and passenger arrivals during the intermediate season. Therefore, based on this trend, despite fluctuations within seasons, tourism seasons in Mafia can be divided into low tourism season (March to June) that coincide with the wet season and high tourism season (July – December – February) during the dry and intermediate climate seasons.

Figure 3: **Trend of Passenger Arrivals at Mafia Airport across Seasons**

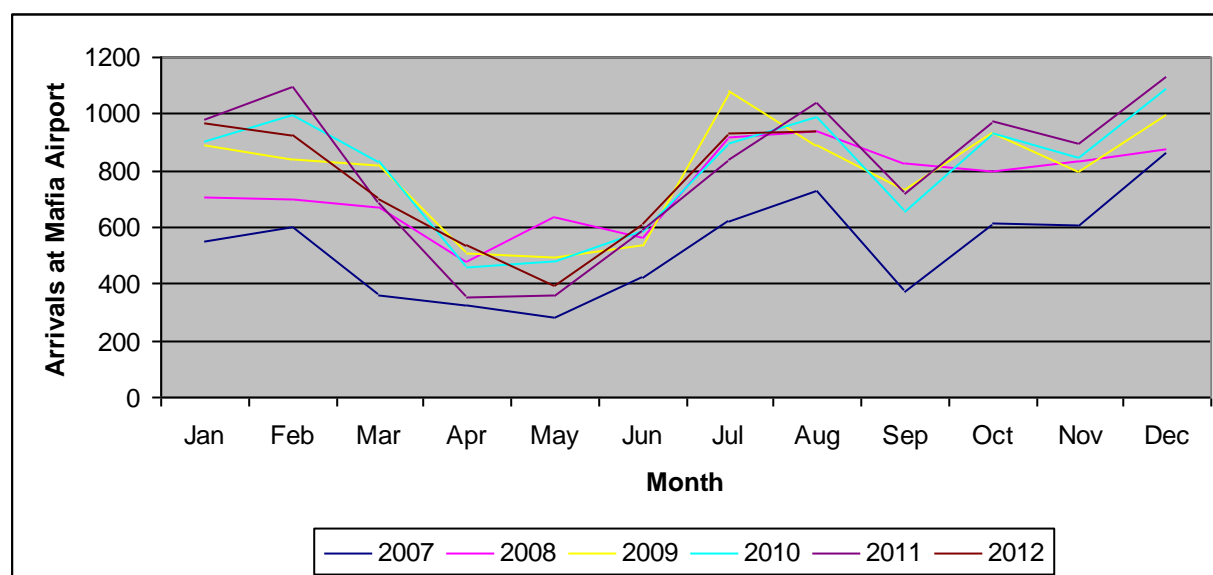


Table 15 presents the number of tourist that visited Mafia Island Marine Park (MIMP) area during five years (2007 to 2011). The table shows that there were sporadic changes of the number of tourists visiting the area. The average annual growth works out at 11%. The table further shows that the

average number of tourist visiting MIMP area was 3,579 tourists. The number was about 40% of the annual average passenger arrivals at Mafia airport (8,896 passengers) shown in **Table 14** above. This finding matches well with findings in **Table 19** that shows that about 40% of the visitors were tourists and about 60% of arrived passengers. About 5% of the tourists were Tanzanians indicating that even Tanzanians are attracted to visit the Island.

Table 15: Tourists Visit to MIMP Area

Year	Tanzanians	Non-Tanzanians	Total	Growth	Total collection in equivalent USD	Growth
2007	159	3,107	3,266		103,962	
2008	141	3,150	3,191	-2%	106,511	2%
2009	142	2,626	2,768	-13%	150,304	41%
2010	198	3,795	3,993	44%	253,360	69%
2011	203	4,372	4,575	15%	331,958	31%
Average Visitors	169	3,410	3,579	11%	189,219	36%
% of Total	5%	95%	100%			

Source: Mafia Island Marine Park (MIMP) Secondary Data of the 2012 Baseline Survey

There are two modes of transport that can be used to access Mafia Island. **Table 16** shows that about 18,250 people travel to Mafia every year using water transport. Given an average of 8,896 travelers by air, it has been established that air transport accounts for 33% of average total travelers as shown in **Figure 4**.

Table 16: Travelers to Mafia by Water Transport

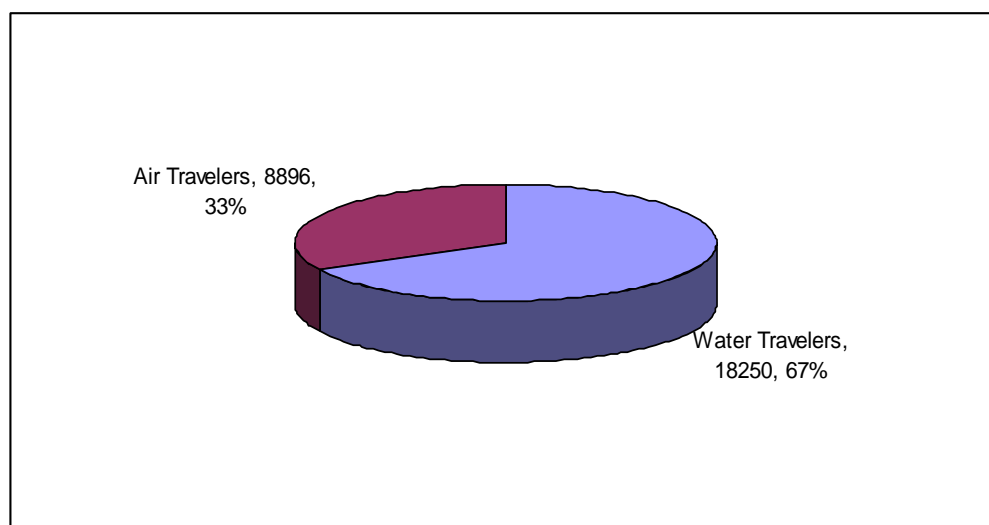
Mode	2008	2009	2010	2011	Average
Water	16,425	18,250	18,250	20,075	18,250
Growth	-	11%	0%	10%	5%



Source: Mafia District Council Secondary Data of the 2012 Baseline Survey

Table 17(a) shows data collected through exit passengers' survey. It indicates that the habitual mode of transport for about 92% of the passengers interviewed was air travel as shown in the table. This is higher than the proportion in **Figure 4** but has bias because those interviewed were already travelling by plane. Boat transport was a habitual mode of transport for 8% of the passengers interviewed while travelling by plane. **Table 17(b)** shows that hotel guests that had travelled to Mafia by boat were 7.7% of total guests interviewed. Therefore, findings of the Hotel

Figure 4: Distribution of Water and Air Transport Travelers to Mafia Island



Guest survey and Exit Passengers survey show that the two modes of transport (air and water) serve different populations, leading to little substitution after the airport upgrade, especially if water transport will also improve after completion of the boat landing stage (jetty) that was under construction during baseline data collection.

Table 17(a): **Habitual Mode of Transport for Exit Air travel Passengers**

Transport Mode	Season						Total			
	Wet Season			Dry Season						
	Male	Female	Total	Male	Female	Total	Male	Female	Total	%
By Air	215	127	342	195	137	332	410	264	674	92%
By Boat	20	11	31	14	10	24	34	21	55	8%
Total	235	138	373	209	147	356	444	285	729	100%
%			51%			49%	61%	39%	100%	

Source: The 2012 Baseline Passenger Exit Survey

Table 17(b): **Mode of Transport used by Hotel Guests Interviewed**

Mode of Transport	Season						Total			
	Wet Season			Dry Season						
	TZ*	Non Tanzanian	Total	TZ*	Non Tanzanian	Total	TZ*	Non Tanzanian	Total	%
By Air (Scheduled commercial)	18	125	143	8	196	204	26	321	347	83.6%
By Air (Chartered)	5	11	16	4	15	19	9	26	35	8.4%
By Boat	5	11	16	2	14	16	7	25	32	7.7%
NS	0	0	0	0	1	1	0	1	1	0.2%
Total	28	147	175	14	226	240	42	373	415	100%
%			42%			58%	10%	90%	100%	

* Tanzanian

Source: The 2012 Hotel Guest Survey

About 70% of the passengers interviewed were visiting Mafia for the first time as shown in **Table 18**. It was interesting to find out that about 28% of the passengers interviewed including non-Tanzanians had visited the island more than once, indicating that Mafia has attractions that pull visitors.

Literature reviewed indicate that Mafia Island is one of the most exciting diving and fishing areas in the world and is home to about four hundred species of fish and five species of turtle. Sports fishermen flock there for the superb catches, many of them great fighters, which include barracuda, marlin, sailfish and tuna. Divers see a veritable kaleidoscope of reef dwellers among the fifty types of coral. These include butterfly fish, clown fish, lion fish and rainbow fish while, in deeper waters, they come across groupers, rays and sharks. The rare dugong breeds in the Mafia channel while the green and hawksbill turtle nest on the smaller islands. Mafia Island is a popular destination for visitors to relax after their safari and the island's relaxed and secluded beaches offer privacy and comfort for discerning travelers. Most tourists visit Mafia for water sports (such as snorkeling, diving, munge/sand-bank picnic, turtle watching, whale shark watching and sailing excursions) and fishing sports.

Table 18: **Frequency of travelling to Mafia**

Frequency	Season						Total			
	Wet Season			Dry Season			Tanzanian	Non Tanzanian	Total	%
	Tanzanian	Non Tanzanian	Total	Tanzanian	Non Tanzanian	Total				
First Time	46	100	146	22	174	196	68	274	342	70%
One to Three Times	23	16	39	13	12	25	36	28	64	13%
Four - Six Times	7	3	10	4	2	6	11	5	16	3%
More than 6 Times	25	8	33	25	3	28	50	11	61	12%
NS	5	0	5	1	0	1	6	0	6	1%
Total	106	127	233	65	191	256	171	318	489	100%

Source: The 2012 Baseline Passenger Exit Survey

With regard to purpose of travelling to Mafia, **Table 19** shows that about 40% were tourists (package and non-package⁶), 36% travelled for business purposes with the majority going to Mafia for Government business, and 25% travelled for social relationship purposes. Among the passengers interviewed, 54% were Tanzanians while 46% were non Tanzanians. During dry season, non Tanzanian passengers exceeded Tanzanian passengers as shown in the table.

Table 19: **Purpose of visiting to Mafia**

Purpose of visit to Mafia	Season						Total			
	Wet Season			Dry Season			Tanzanian	Non Tanzanian	Total	%
	Tanzanian	Non Tanzanian	Total	Tanzanian	Non Tanzanian	Total				
Tourist - Package	1	44	45	5	96	101	6	140	146	
Tourist - Non-package	6	57	63	4	77	81	10	134	144	
Sub-total	7	101	108	9	173	182	16	274	290	40%
%	6%	94%	100%	5%	95%	100%	6%	94%	100%	
Business-Government	82	10	92	52	1	53	134	11	145	
Business – NGO	27	6	33	33	7	40	60	13	73	
Business - Own in Mafia	12	7	19	6	7	13	18	14	32	
Business - Looking to own in Mafia	6	0	6	2	1	3	8	1	9	
Sub-total	127	23	150	93	16	109	220	39	259	36%
%	85%	15%	100%	85%	15%	100%	85%	15%	100%	
Visiting friends and relatives	29	10	39	15	3	18	44	13	57	
Returning Mafia Resident	41	1	42	26	1	27	67	2	69	
Other	31	3	34	15	5	20	46	8	54	
Sub-total	101	14	115	56	9	65	157	23	180	25%
%	88%	12%	100%	86%	14%	100%	87%	13%	100%	
Total	235	138	373	158	198	356	393	336	729	100%
%	63%	37%	100%	44%	56%	100%	54%	46%	100%	

Source: The 2012 Baseline Passenger Exit Survey

The above information shows that about 40% were tourists and those travelling for business purposes were 36%. Both MIMP data in **Table 15** and the above survey data indicate that about 6% of tourists visiting Mafia were Tanzanians while 94% were non Tanzanians. **Table 20** shows that the top five important source markets are America (17.9%), Britain (17.3%), Germany (5.7%), Switzerland (5.7%) and Italia (5.4%), in that order. The table also shows that there are almost equal proportions of package and non-package tourists.

⁶ A **package tour** or package holiday consists of transport and accommodation and other services advertised and sold together. Packages reveal a link between tourism and other sectors that provide services to tourists such as transport, attractions, guide, restaurants and entertainment.

Non-package tour is when accommodation is advertised and sold separately without including any other service.

Table 20: Tourists Nationality

Nationality	Tourist - Package	Tourist - Non-package	Business-Government	Business – NGO	Business - Own in Mafia	Business - Looking to own in Mafia	Visiting friends and relatives	Returning Mafia Resident	Other	Total	%
American	27	29	0	0	0	0	2	1	1	60	17.9%
Australian	3	0	0	0	1	0	0	0	1	5	1.5%
Austrian	3	1	0	0	0	1	0	0	0	5	1.5%
Belgian	4	4	0	0	0	0	1	0	0	9	2.7%
British	18	24	0	7	4	0	3	0	2	58	17.3%
Bulgarian	1	0	0	0	0	0	0	0	0	1	0.3%
Canadian	2	1	0	1	0	0	0	0	0	4	1.2%
Chinese	1	0	0	0	0	1	0	0	0	2	0.6%
Check	0	1	0	0	0	0	0	0	0	1	0.3%
Danish	4	1	0	0	0	0	0	0	0	5	1.5%
Dutch	4	7	1	0	0	0	0	0	0	12	3.6%
French	7	5	1	0	0	0	0	0	0	13	3.9%
German	10	7	1	0	0	0	0	0	1	19	5.7%
Greece	1	0	0	0	0	0	0	0	0	1	0.3%
Guinea Conakry	1	0	0	0	0	0	0	0	0	1	0.3%
Indian	0	0	1	0	2	0	0	0	0	3	0.9%
Irish	0	2	0	0	0	0	0	0	0	2	0.6%
Italian	5	8	0	0	2	0	1	0	2	18	5.4%
Japanese	0	0	1	0	0	0	0	0	0	1	0.3%
Kenyan	3	1	0	0	0	0	0	0	0	4	1.2%
Norwegian	9	7	0	0	0	0	0	0	0	16	4.8%
Oman	0	0	0	0	0	0	3	0	0	3	0.9%
Pilipino	1	0	1	0	0	0	0	0	0	2	0.6%
Portuguese	1	0	0	0	0	0	0	0	0	1	0.3%
Russian	0	1	0	0	1	0	0	0	0	2	0.6%
South African	1	3	0	0	0	0	0	0	0	4	1.2%
Swedish	0	5	0	0	0	0	0	0	0	5	1.5%
Swiss	16	2	0	0	1	0	0	0	0	19	5.7%
Senegal	1	0	0	0	0	0	0	0	0	1	0.3%
Turkish	3	2	2	0	0	0	0	0	0	7	2.1%
Ugandan	1	0	0	0	0	0	0	0	0	1	0.3%
NS	13	23	3	5	2	0	3	1	1	51	15.2%
Total	140	134	11	13	14	1	13	2	8	336	100.0%
%	41.7%	39.9%	3.3%	3.9%	4.2%	0.3%	3.9%	0.6%	2.4%	100.0%	

Source: The 2012 Baseline Passenger Exit Survey

4.3.3 Visitor spending by tourism and business

The baseline survey found out that there were only 143 hotel rooms in Mafia as shown in *Table 21*. It was also established that all rooms were double leading to a bed capacity of 286 rooms. Therefore, annual bed-nights are 104,390. With regard to seasonality, the study established that the low season covers four (4) months of March, April, May, and June every year. These are one third of the twelve months of the year. Consequently, there are 34,797 bed-nights during low season and 69,593 bed-nights during high season (covering the dry and intermediate seasons in Section 4.3.2).

Table 21: Capacity of Hotels in Mafia

Location	Rooms capacity	Beds capacity	Annual Bed - Nights	High Season	Low Season
Bweni	6	12	4,380	2,920	1,460
Chole	7	14	5,110	3,407	1,703
Chunguruma	9	18	6,570	4,380	2,190
Kilindoni	36	72	26,280	17,520	8,760
Utende	85	170	62,050	41,367	20,683
Total	143	286	104,390	69,593	34,797

Source: The 2012 Baseline Hotel Manager Survey

Occupancy data collected for the six months (December 2011 to May 2012) revealed that the overall average occupancy rate during high season is 71% as shown in *Table 22*. The overall average

occupancy rate during low (wet) season is 42%. The table also indicates that during the low season, hotels at Bweni, Chole and Chunguruma sub-villages did not receive guests.

Table 22: **Occupancy rate (percent)**

Location	High Season Months			Low Season Months			Average High Season	Average Low Season
	December, 2011	January, 2012	February, 2012	March, 2012	April, 2012	May, 2012		
Bweni	100	95	90	-	-	-	95	-
Chole	100	70	60	-	-	-	77	-
Chunguruma	95	85	75	-	-	-	85	-
Kilindoni	79	67	57	44	78	65	68	62
Utende	73	73	52	30	23	12	66	21
Total	81	73	59	36	50	38	71	42

Source: The 2012 Baseline Hotel Manager Survey

The baseline survey has also established average nightly bed rate that were charged by hotels in Mafia during the study as shown in **Table 23**. The table shows that there are very slight differences between high and low season's rates. Due to few rooms, there is no incentive to lower tariffs by seasons because there is no capacity to take advantage of volume increases.

Table 23: **Average nightly bed rate**

USD

(a) High Season							
Location	December, 2011		January, 2012		February, 2012		Average High Season
	Resident	Non-resident	Resident	Non-resident	Resident	Non-resident	
Bweni	150.00	150.00	150.00	150.00	150.00	150.00	150
Chole	180.00	180.00	180.00	180.00	180.00	180.00	180
Chunguruma	160.00	160.00	160.00	160.00	160.00	160.00	160
Kilindoni	21.25	21.25	21.25	21.25	21.25	21.25	21
Utende	127.22	127.22	127.22	127.22	127.22	127.22	127
Total	100.87	100.87	100.87	100.87	100.87	100.87	101
(b) Low Season							
Location	March, 2012		April, 2012		May, 2012		Average Low Season
	Resident	Non-resident	Resident	Non-resident	Resident	Non-resident	
Bweni	150.00	150.00	150.00	150.00	150.00	150.00	150
Chole	180.00	180.00	180.00	180.00	180.00	180.00	180
Chunguruma	160.00	160.00	160.00	160.00	160.00	160.00	160
Kilindoni	20.61	18.76	20.61	18.76	20.61	18.76	20
Utende	122.84	122.84	122.84	122.84	122.84	122.84	123
Total	98.49	103.19	98.49	103.19	98.49	103.19	101

Source: The 2012 Baseline Hotel Manager Survey

The above rates include food and other services in a package offered by some hotels. **Table 24** shows that all the hotels at Bweni, Chole and Chunguruma offer package services and they do not

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have tariffs for charging food separately. The overall average charges per person for food and beverages were established to be USD 35. However, since some services are not provided by hotels in some locations, the study has used averages for each location.

Table 24: **Average Tariffs for Food and Beverages**

USD

Location	Average price of lunch	Average price of dinner	Average price of meal	Average price of soda	Average price of local beer	Overall
Bweni	.	.	.	1	3	2
Chole	.	.	2	2	2	2
Chunguruma	.	.	.	2	3	3
Kilindoni	2	.	16	8	6	8
Utende	15	7	74	14	20	26
Total	17	7	92	27	34	35

Source: The 2012 Baseline Hotel Manager Survey

The average prices at Utende are very high (outlier) because they are aimed at discouraging non-package customers. Package tourists pay reduced prices in their “confidential” offers with a room for negotiations. The overall expenditure for other services per day was established to be USD 131 as shown in *Table 25*.

Table 25: **Average Tariffs for other Services**

USD

Location	Average price of Airport transfer (Transport)	Average price of shopping	Average price of Snorkeling	Average price of Excursion sailing	Average price of Diving	Average price of Fishing sports	Average price of Other (bicycle trip)	Average price of Watching at Juani Island	Average price of Whaleshark watching at Kilindoni	Average price of Riding trip	Overall
Bweni	.	.	.	.	.	.	.	.	.	.
Chole	30	.	.	.	.	.	.	.	.	.	30
Chunguruma	.	.	90	90	90	.	.	.	.	.	90
Kilindoni	5	.	20	20	45	.	.	.	.	.	23
Utende	220	60	35	60	95	300	70	35	40	2	92
Total	255	60	145	170	230	300	70	35	40	2	131

Source: The 2012 Baseline Hotel Manager Survey

The capacity of hotels (bed-nights per year), occupancy rates, average nightly bed rate, tariffs for food and beverages as well as other services were used in calculating annual hotel revenue as shown in *Table 26*. The assumption is that a visitor uses at least one other services provided at the location.

Table 26: **Estimated Hotel Revenue**

USD

Location	Accommodation (Bed)			Food and Beverages			Other Services			Total	
	High Season	Low Season	Sub-total	High Season	Low Season	Sub-total	High Season	Low Season	Sub-total	High Season	Low Season
Bweni	416,100	-	416,100	5,548	-	5,548	-	-	-	421,648	-
Chole	472,210	-	472,210	5,247	-	5,247	78,702	-	78,702	556,159	-
Chunguruma	595,680	-	595,680	11,169	-	11,169	335,070	-	335,070	941,919	-
Kilindoni	250,186	108,624	358,810	95,309	43,450	138,758	274,013	124,918	398,930	619,507	276,991
Utende	3,467,382	534,242	4,001,624	709,858	112,929	822,787	2,511,804	399,596	2,911,400	6,689,044	1,046,767
Total	5,201,558	642,866	5,844,424	827,130	156,379	983,509	3,199,589	524,513	3,724,102	9,228,277	1,323,758

Source: Consultant’s Estimates Based on the 2012 Baseline Hotel Manager Survey

Therefore, using hotel manager's survey, visitor spending is established to be as follows:

- i) Annual aggregate visitor spending based on hotel revenue - dry season - is **USD 9,228,277**.
- ii) Annual aggregate visitor spending based on hotel revenue - wet season – is **USD 1,323,758**.

Comparison of the above information and findings based on exit interview and guest survey in **Table 27(a)** shows that the two bases of visitor spending provides estimates which are a little bit close during the low (wet) season – USD 1,323,758 compared with USD 1,542,159, a difference of 16%. However, high season figures are quite different - – USD 9,228,277 compared with USD 2,751,205, a difference of 235%. Hotel data based expenditure is high because gross tariffs were used in the computations while actual expenditure is lowered by negotiations and discounts. During the dry season, which is also the high tourism season, tariffs escalate leading to overstated spending estimates. The exit interview and guest survey seems closer to reality than the hotel manager. Therefore, spending indicators are based on exit interview and guest survey as computed in **Table 27(a)**.

Table 27(a) presents baseline data on spending of hotel guests and passengers interviewed. The table shows that average spending of hotel guests was USD 984 and USD 1,190 during dry and wet seasons, respectively. The average spending of passengers interviewed during exit was USD 693 and USD 487 during dry and wet seasons, respectively. Since expenditure estimated by hotel guests was higher than expenditure reported by exit passengers during the same season, it seems that visitors to Mafia spend less than what they had planned to spend in the Island. This could be attributed to inadequate supply and easy access of tourist related businesses in the Island. The mean days of stay established by the baseline survey for exit passengers was 6.34 days while on average (mean), hotel guests had planned to stay in Mafia for 4.89 days. **Table 27(b)** shows that the mean budget for tourists and business hotel guests was USD 1,134 and USD 349, respectively. The mean recall of actual expenditure for tourists and business exit passengers was USD 820 and USD 234, respectively that were lower than the mean budget of hotel guests. Passengers spending per day works out at USD 109 and USD 77 during dry and wet seasons, respectively. The expenditure per day during wet season is lower than the average nightly bed rate in **Table 23**. This indicates that the Island is visited by budget tourists during the wet season. The overall average is USD 834 and 738 USD during dry and wet seasons, respectively. Most of the expenditure is on tourism related activities. Accommodation takes the lion's share of total expenditure.

Table 27(a): Hotel Guests Budget and Exit Passengers Spending by Type

USD

Visitor Category	Type of Budget/Expenditure	Wet Season		Dry Season		Total		Average
		Valid N	Sum	Valid N	Sum	Valid N	Sum	
Mafia Hotel Guests	Accommodation	77	41,253	145	77,117	222	118,370	533
	Food & beverages	76	9,687	117	21,639	193	31,326	162
	Transport (taxis)	66	2,574	75	2,472	141	5,046	36
	Activities	101	17,605	99	15,668	200	33,273	166
	Shopping (tourism)	43	2,337	60	5,186	103	7,523	73
	Shopping (business)	18	2,532	8	1,580	26	4,112	158
	Accommodation, food & beverages package	21	24,170	3	3,300	24	27,470	1,145
	Accommodation & transport (taxis) package	19	43,650	9	11,600	28	55,250	1,973
	Accommodation & activities package	1	1,750	19	28,700	20	30,450	1,523
	Accommodation, shopping (tourism) package	0	.	12	16,870	12	16,870	1,406
	Accommodation and shopping (business) package	0	.	3	5,250	3	5,250	1,750
	Accommodation and other package	9	16,900	14	23,770	23	40,670	1,768
	Other Expenditure	74	8,884	80	18,963	154	27,848	181
	Sub-total	144	171,343	236	232,116	380	403,458	1,062
	Average budget per hotel guest		1,190		984		1,062	
Mafia Airport Exit Passengers	Accommodation	146	52,222	169	68,315	315	120,537	383
	Food and beverages	138	12,296	168	25,643	306	37,938	124
	Transport (taxis)	85	4,217	104	7,878	189	12,095	64
	Activities	85	9,426	134	30,504	219	39,930	182
	Shopping (tourism)	53	1,666	64	4,195	117	5,861	50
	Shopping (business)	11	880	11	341	22	1,221	55
	Accommodation and beverages package	1	300	10	6,250	11	6,550	595
	Accommodation and Transport package	0	.	5	2,700	5	2,700	540
	Accommodation and other package	0	.	8	4,225	8	4,225	528
	Other Expenditure	35	1,359	40	5,856	75	7,215	96
	Sub-total	169	82,365	225	155,907	394	238,272	605
	Average expenditure per exit passenger		487		693		605	
Total		344	253,708	465	388,023	809	641,730	
Average expenditure for hotel guest and exit passengers			838.62		838.23		833.24	

Source: The 2012 Baseline Passenger Exit and Hotel Guest Surveys

The summary descriptive Statistics by category and season are as follows:

Category	Season	N	Minimum	Maximum	Mean	Std. Deviation
Exit Passengers	Wet season	169	1.72	4,219.74	487.3660	625.12545
	Dry season	225	3.82	10,206.37	692.9197	939.73298
	Total	394	1.72	10,206.37	604.7507	825.08862
Hotel Guests	Wet season	144	19.12	18,140.00	1,189.8803	1,673.00205
	Dry season	236	19.12	6,000.00	983.5409	825.34353
	Total	380	19.12	18,140.00	1,061.7327	1,220.03457

However, since hotel guest spending data was on planned budget while exit passengers' spending was based on recall of actual spending, passenger exit data is more realistic than the planned expenditure of hotel guests. Therefore, aggregate spending is based on the mean spending of exit passengers. TAA data in Section 4.3.2 indicate that the average Annual Passengers Arrivals at Mafia Airport from 2007 to 2011 was 3,297 and 2,091 during dry and wet seasons, respectively. Using this TAA data and the mean spending of exit, the baseline establishes as follows:

- i) Annual aggregate visitor spending based on guests and passengers data - dry season - is **USD 2,284,556**.
- ii) Annual aggregate visitor spending based on guests and passengers data - wet season – is **USD 1,019,082**.

Table 27 (b) shows that about 95% of total hotel guests' expenditure was contributed hotel guests that had visited Mafia for tourism purpose. Hotel guests that had visited the Island for business purposes contributed 2% of the total hotel guests' expenditure. Hotel guests with other purposes contributed 3% of the total hotel guests' expenditure. However, this data is likely to have bias because hotels and guest houses covered by the survey were those receiving tourists in the Island.

However, the table shows that data from exit passengers' survey exhibited a similar pattern of tourists contributing more (83%) than those travelling for business purpose (12%). This is also likely to have bias because air travel is expected to carry more tourists because tariffs are higher than boat transport used by about 67% of visitors to the Island as shown in **Figure 4**.

Table 27(b): Hotel Guests and Exit Passengers Spending by Tourism and Business

USD

(i) Hotel Guests												
Type of Expenditure	Tourist			Business			Other			Total		
	Valid N	Sum	Mean	Valid N	Sum	Mean	Valid N	Sum	Mean	Valid N	Sum	Mean
Accommodation	184	112,339	611	22	1,475	67	16	4,556	285	222	118,370	533
Food & beverages	157	29,161	186	21	934	44	15	1,231	82	193	31,326	162
Transport (taxi)	109	3,747	34	19	906	48	13	392	30	141	5,046	36
Activities	185	30,237	163	11	2,237	203	4	800	200	200	33,273	166
Shopping (tourism)	90	6,212	69	9	461	51	4	850	213	103	7,523	73
Shopping (business)	17	3,040	179	6	322	54	3	750	250	26	4,112	158
Accommodation, food & beverages package	24	27,470	1,145	0	.	.	0	.	.	24	27,470	1,145
Accommodation & transport (taxi) package	27	54,050	2,002	1	1,200	1,200	0	.	.	28	55,250	1,973
Accommodation & activities package	20	30,450	1,523	0	.	.	0	.	.	20	30,450	1,523
Accommodation, shopping (tourism) package	12	16,870	1,406	0	.	.	0	.	.	12	16,870	1,406
Accommodation and shopping (business) package	2	3,500	1,750	0	.	.	1	1,750	1,750	3	5,250	1,750
Accommodation and other package	23	40,670	1,768	0	.	.	0	.	.	23	40,670	1,768
Other Expenditure	141	26,831	190	8	494	62	5	523	105	154	27,848	181
Sub-total	339	384,576	1,134	23	8,030	349	18	10,852	603	380	403,458	1,062
As % of Sub-total		95%			2%			3%			100%	

(ii) Exit Passengers												
Type of Expenditure	Tourist			Business			Other			Total		
	Valid N	Sum	Mean	Valid N	Sum	Mean	Valid N	Sum	Mean	Valid N	Sum	Mean
Accommodation	183	105,713	578	101	11,009	109	31	3,816	123	315	120,537	383
Food and beverages	173	27,835	161	101	6,524	65	32	3,579	112	306	37,938	124
Transport (taxi)	75	4,797	64	85	4,708	55	29	2,590	89	189	12,095	64
Activities	171	35,707	209	35	3,271	93	13	952	73	219	39,930	182
Shopping (tourism)	83	4,788	58	22	749	34	12	324	27	117	5,861	50
Shopping (business)	5	490	98	11	353	32	6	377	63	22	1,221	55
Accommodation and beverages package	11	6,550	595	0	.	.	0	.	.	11	6,550	595
Accommodation and Transport package	5	2,700	540	0	.	.	0	.	.	5	2,700	540
Accommodation and other package	8	4,225	528	0	.	.	0	.	.	8	4,225	528
Other Expenditure	39	3,937	101	26	801	31	10	2,477	248	75	7,215	96
Sub-total	240	196,742	820	117	27,416	234	37	14,114	381	394	238,272	605
As % of Sub-total		83%			12%			6%			100%	

Source: The 2012 Baseline Passenger Exit and Hotel Guest Surveys

4.3.4 Economic and investment activities on the island

The baseline survey collected secondary data of licensed businesses from Mafia District Council's Planning Department. There were 347 economic and investment activities licensed by Mafia District Council. **Table 28** shows that about 80% were located at Kilindoni Village where the district's headquarters are located.

Table 28: **Economic and Investment Activities Licensed by Mafia District Council**

Village	Activity	2007	2008	2009	2010	2011	2012
Kilindoni	Retail shops	29	25	50	34	16	
	Second hand clothes	1	1	2	1		
	Domestic Appliances		1			2	
	Garage	1					1
	Tailoring mart	2	2				
	Furniture mart	2	1				
	Timber	1					
	Stationery	1	4	3		4	
	Guest house	1	2	1	1	2	1
	Cleaning service	1		1			
	Building materials	4	3	4	4	3	
	Lubricants & spare parts	2	2	2	3		
	Diesel & petrol	3	1	3	1		
	Garments	2		2	1		
	Cereals & Vegetables	2					
	Welding	1					
	Sea Transportation services	2	1		1	1	
	Building & Civil contractor		2	3			
	Butchery			1		1	
	Electrical goods		1	1	2		
	Restaurants		3	1			
	Hair saloon		1		5	3	2
	Agricultural inputs		1				
	Fish selling		2				
	Security services		1		1		
	Diving & other services		1				
	Gas				1		
	Flour milling machine					2	
	Cosmetics					2	
Sub-total		55	55	74	55	36	4
<i>Cumulative</i>		<i>55</i>	<i>110</i>	<i>184</i>	<i>239</i>	<i>275</i>	<i>279</i>
Other Villages:							
Dongo	Retail shops	2					
	Guest house					1	
Baleni	Retail shops	8	1	2			
Kungwi	Retail shops	1					
Ndagoni	Retail shops	4				1	
Kanga	Retail shops			2	1		
Bweni	Retail shops			2			
Kiegeani	Retail shops	1	4	5		1	1
	Guest house				1	1	
	Farming Tourism	1					
Jibondo	Retail shops	1	4	1		1	
Juani	Retail shops	6					
Korogwe	Retail shops	3	4	1			
Mibuani	Retail shops	2	1	2	1		
	Timber	1					

Source: Mafia District Council's Secondary Data of the 2012 Baseline Survey

There were 13 tourist hotels and three fish processing factories that are not licensed by Mafia District Council because the country's law requires them to be licensed by the Ministry of Natural Resources and Tourism or the Ministry of Industry and Trade.

Data on economic and investment activities was also obtained through walking thoroughly through each sub-village of the three villages of Kilindoni, Kiegeani and Chole to list Income Generating Activities (IGAs)⁷ and Stand-alone Businesses. It was found out that there were 1,858 IGAs (in 1,572 households) as shown in **Table 29**. Although the listing survey covered three villages only, the businesses licensed by the Mafia District Council (347) were just 19% of the total IGAs found in the three villages, implying that most are in the informal sector. The table shows that 1,592 IGAs were located within households while 266 were located outside households (business purpose buildings that are not used as dwellings). About 65% of the IGAs were in Trade/Restaurant/Hotels sector, followed by manufacturing sector (16%) and then Agriculture and fishing (12%). However, most of the manufacturing activities were at low levels of food processing such as bakery and making burns. About 53% of the IGAs were owned by women while 47% were male owned.



Consultation with Village Executive Officer before walking through the Village

Table 29: Income Generating Activities in Kilindoni, Kiegeani and Chole Villages

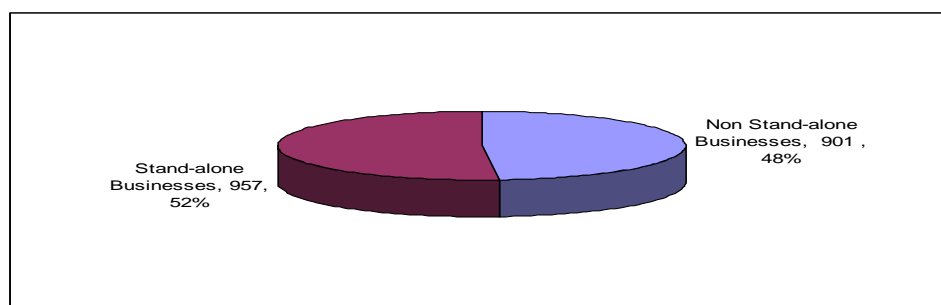
Sector	Located within			Located outside			Total			
	Female	Male	Total	Female	Male	Total	Female	Male	Total	%
Agriculture and fishing	77	113	190	4	26	30	81	139	220	12%
Manufacturing	198	69	267	12	18	30	210	87	297	16%
Construction	2	24	26	-	9	9	2	33	35	2%
Trade/ Restaurants/Hotels	563	462	1,025	115	73	188	678	535	1,213	65%
Community and Personal services	9	75	84	-	9	9	9	84	93	5%
Total	849	743	1,592	131	135	266	980	878	1,858	100%
%	53%	47%	100%	49%	51%	100%	53%	47%	100%	

Source: The Survey

Comparison of business that were found licensed by the Mafia District Council in **Table 28** with the businesses found at the three villages in **Table 29** reveals that the council makes inadequate efforts to make sure that all the businesses that are supposed to have licenses are licensed.

Figure 5: Stand-alone and Non Stand-alone IGAs

Among the IGAs, 957 or 52% of the IGAs were Stand-alone businesses⁸. Their distribution is shown in **Figure 5** and in **Table 30**. Therefore, there were slightly equal number of Stand-alone IGAs and non stand-alone IGAs.



⁷ An IGA is any activity that generates income after some investment.

⁸ A Stand-alone business is an Income Generating Activity (IGA) established outside the household of the owner.

Table 30: Stand-alone Businesses in Kilindoni, Kiegeani and Chole Villages

Sector	Located within			Located outside			Total			
	Female	Male	Total	Female	Male	Total	Female	Male	Total	%
Agriculture and fishing	3	86	89	0	28	28	3	114	117	12%
Manufacturing	65	46	111	11	10	21	76	56	132	14%
Construction	0	11	11	0	11	11	0	22	22	2%
Trade/ Restaurants/Hotels	247	203	450	95	80	175	342	283	625	65%
Community and Personal services	4	38	42	0	19	19	4	57	61	6%
Total	319	384	703	106	148	254	425	532	957	100%
%	45%	55%	100%	42%	58%	100%	44%	56%	100%	

Source: The 2012 Baseline Village Leader Survey (Listing of IGAs)

About 1,443 or 78% of total IGAs were in Kilindoni Village, 228 IGAs or 12% of total IGAs were in Kiegeani Village, and 187 IGAs or 10% of total IGAs were in Chole Village. People from other wards and villages were found owning businesses at Kilindoni.

The top five economic and investment activities (IGAs) were food stalls accounting for 14.1% of total IGAs followed by roadside stalls (9.4%), retail shops (9.3%), making burns (8.6%), and fishing (7.4%) as shown in **Table 31**. The table shows that other popular activities include selling of fried fish (4.0%), sea weed farming (3.6%), selling of fruits (3.4%), tailoring (2.6%), selling of flesh fish (2.2%), carpentry (2.0%), making coconut mats for various uses, running a kiosk (all 1.8%), mason and plumbing (1.6%), selling new and used clothes as well as mobile phone/Accessories/Voucher/Charging services kiosks (all 1.4%), and bicycle/motor cycle repair (1.3%). Other activities are as shown in the table.

Photographs of main types of economic and investment activities found during the baseline survey are shown in **Figure 6**. Given the number and proportions they make into the total IGAs, the photographs indicate that the economic and investment activities in Mafia Island during the baseline survey were low level with very limited capital.

Table 31: Businesses Activities in Kilindoni, Kiegeani and Chole Villages

S/No.	Activity	Gender of owner		Total	%
		Female	Male		
1	Art Shop/Artist	0	5	5	0.3%
2	Arbotour (slaughtering)	0	2	2	0.1%
3	Banana wholesale/retail	0	3	3	0.2%
4	Bar	1	3	4	0.2%
5	Bicycle/Motor cycle repair	0	25	25	1.3%
6	Boat repair	0	8	8	0.4%
7	Builder- wood/mud houses	1	3	4	0.2%
8	Building Blocks Maker	0	2	2	0.1%
9	Burns (samosa/chaptati, scones,biss etc)	154	6	160	8.6%
10	Butcher	0	1	1	0.1%
11	Building material	0	1	1	0.1%
12	Black smith	0	2	2	0.1%
13	Bed mats & door carpet	1	0	1	0.1%
14	Carpentry	0	37	37	2.0%
15	Cement retail	1	0	1	0.1%
16	Civil and Building contractor	0	1	1	0.1%
17	Clothes/Shoes on credit	22	0	22	1.2%
18	Clothes/Used clothes shop	7	19	26	1.4%
19	Coconut collection	1	4	5	0.3%
20	Coconut mat	28	5	33	1.8%
21	Coconuts	4	6	10	0.5%
22	Coffee shop	0	6	6	0.3%
23	Charcoal/Firewood/charcoal wholesale	7	8	15	0.8%
24	Clothes mat	0	1	1	0.1%
25	Cosmetics/Boutique	5	0	5	0.3%
26	Cargo/Fishing boat	0	2	2	0.1%
27	Cargo transporter	0	1	1	0.1%
28	Carving	1	0	1	0.1%
29	Domestic chicken/Poultry	11	3	14	0.8%
30	Electronics/Electrical goods	1	8	9	0.5%
31	Electronics Repair/Installation	0	3	3	0.2%
32	Electrician/Electrical installation	0	2	2	0.1%
33	Embroidery products on credit	1	0	1	0.1%
34	Fish monger	2	8	10	0.5%
35	Fishing	4	134	138	7.4%
36	Fried fish	71	3	74	4.0%
37	Food stall	236	26	262	14.1%
38	Food supplies	0	1	1	0.1%
39	Fresh fish	30	11	41	2.2%
40	Fresh fish to DSM	2	4	6	0.3%
41	Fresh fish to TANSPECA/MOZAMBIQUE	1	0	1	0.1%
42	Fried, cooked Banana/cassava/Maize	4	0	4	0.2%
43	Fruits	57	7	64	3.4%
44	Food processing	1	0	1	0.1%
45	Fishing material	0	1	1	0.1%
46	Fresh fish packing material	0	1	1	0.1%
47	Farm inputs	1	0	1	0.1%
48	Fish processing/Aggregates fish	2	0	2	0.1%
49	Fishing nets making	0	1	1	0.1%
50	Dried fish	2	4	6	0.3%
51	Frying fish	0	5	5	0.3%
52	Garage/Mechanical workshop	0	11	11	0.6%
53	Groundnuts	4	1	5	0.3%
54	Guest House	1	5	6	0.3%
55	House renting	0	2	2	0.1%
56	Hawker	0	6	6	0.3%

S/No.	Activity	Gender of owner		Total	%
		Female	Male		
57	Ice blocks production centre	0	1	1	0.1%
58	Internet café	0	1	1	0.1%
59	Ice cream/Ice cream packs	17	2	19	1.0%
60	Ironing clothes	0	1	1	0.1%
61	Juice water	1	0	1	0.1%
62	Kiosk	5	28	33	1.8%
63	Lobusta	0	6	6	0.3%
64	Local Brew	12	5	17	0.9%
65	Lubricants shop	0	1	1	0.1%
66	Laundry	0	2	2	0.1%
67	Liquid soap	1	0	1	0.1%
68	Market stall	0	4	4	0.2%
69	Mason/Plumbing	1	29	30	1.6%
70	Matress shop	0	3	3	0.2%
71	Milling machine	0	3	3	0.2%
72	Mobile phone/Accessories/Voucher/Charging	1	25	26	1.4%
73	Motor cycle/bicycle spare parts	0	2	2	0.1%
74	Music/Video library	0	12	12	0.6%
75	Milik supply	1	1	2	0.1%
76	Motor cycle/Bicycle spare parts	0	3	3	0.2%
77	Mats making (Mikeka)	6	0	6	0.3%
78	Oil and spare shop	0	1	1	0.1%
79	Octopus	12	12	24	1.3%
80	Ornaments	2	11	13	0.7%
81	Petroleum	0	3	3	0.2%
82	Pharmaceutical store	1	5	6	0.3%
83	Photo studio/Cassettes	0	1	1	0.1%
84	Polidge/Polidge and bread	1	0	1	0.1%
85	Prawns	3	1	4	0.2%
86	Push cart	0	2	2	0.1%
87	Photographer	0	2	2	0.1%
88	Porter	0	1	1	0.1%
89	Plating (Msusi)	5	0	5	0.3%
90	Poltry (Ufinyanzi)	1	0	1	0.1%
91	Refrigeration workshop	0	2	2	0.1%
92	Retail shop	25	148	173	9.3%
93	Roadside stall	110	64	174	9.4%
94	Repair of fish packing material	0	1	1	0.1%
95	Restaurant	1	0	1	0.1%
96	Shoe shine/Repair	0	4	4	0.2%
97	Soft drinks	4	14	18	1.0%
98	Secretarial & stationery/Stationery	2	5	7	0.4%
99	Salon (Barbers/Beauty shop)	4	12	16	0.9%
100	Squids	12	6	18	1.0%
101	Soaps and perfumes	0	1	1	0.1%
102	Shoe store	0	1	1	0.1%
103	Sea Weed	64	2	66	3.6%
104	shell collection	0	1	1	0.1%
105	Tailoring/Vehicle home seat cover	20	29	49	2.6%
106	Textile retail shop	2	0	2	0.1%
107	Timber	0	2	2	0.1%
108	Traditional Medicine	0	1	1	0.1%
109	Video show/Movie studio	0	2	2	0.1%
110	Water	0	1	1	0.1%
111	Welding	0	3	3	0.2%
112	Wholesale shop	0	1	1	0.1%
113	Wood	2	12	14	0.8%
	Total	980	878	1,858	100.0%

Source: The 2012 Baseline Village Leader Survey (Listing of IGAs)

Figure 6: **Photograph Gallery of Mafia Economic and Investment Activities**

4.3.6 Household income

The study found out that the annual household income per capita was USD 452 as shown in Section 4.2. The break down by different sources of income is given in **Table 6**. The baseline household income per capita was higher than overall findings of the Household Budget Survey (2007) that found mean household income per capita at around TZS 39,362 per month (equivalent to USD 31.57 per month or 378.90 per annum based on the Bank of Tanzania 2007 annual average interbank exchange rate of TZS 1,246.63 per 1 USD). The baseline household income per capita was lower than the income in Dar es Salaam that was highest during HBS (2007) at TZS 80,144 (equivalent to USD 64.29 per month or 771.46 per annum). This is in conformity with reality that total as well as average income in Dar es Salaam must be higher than any other part of the country because it is the main economic hub. It was far better than HBS (2007) income in rural areas - TZS 28,418 (equivalent to USD 22.80 per month or 273.55 per annum). This is because the survey was done at Kilindoni, Kiegeani and Chole villages that comprise semi-urban areas and main tourism areas in the Island.

Furthermore, the Mafia baseline survey established that household income per capita was about USD 1.24 per day, just above the poverty line. This is better status than the national average findings of the Poverty and Human Development Report (PHDR) of 2009 that reported approximately 80% of households in Tanzania spent less than TZS 38,600 per month or TZS 1,380 per day, equivalent to USD 1.11 per day.

5. CONCLUSIONS

The project is expected to benefit about 73,819 people residing on the Island. They will benefit because although the airport will be constructed at Kilindoni, people from other wards and villages have businesses at Kilindoni. Businesses at other parts of the island including tourist hotels depend on supplies and support from Kilindoni. Therefore, although those residing or with businesses at either Kilindoni, Kiegeani or Chole villages are likely to benefit more, the benefits will spill over to other parts of the island.

All potential beneficiaries in Kilindoni, Kiegeani and Chole villages had **positive perception** of the project. They accepted the airport upgrade project and a lot of expectations from the project. They will benefit because negative cultural beliefs and practices in rural areas like Chole Village were declining such that people are making development projects such as construction of good houses without fear. There are no witchcraft beliefs at Kilindoni and Utende because there is mixture of people from all parts of the country and beyond that has brought new cultural practices, especially education and religious beliefs.

The baseline survey has established Outcome, Objective and Goal Indicators as specified in the project logic as well as indicators for each evaluation research question and other indicators in the evaluation design of the project. In particular, it has established that Mafia people are poor with household income per capita of USD 452 which translated to USD 1.24 per day, which is just above the poverty line. Ownership of assets and food condition at households all point to poverty of potential beneficiaries. The baseline survey has established that income poverty, food security status, assets ownership and housing conditions were better in the surveyed Mafia villages than findings of recent national surveys (HBS and PHDR). This was attributed to the fact that the survey was done at Kilindoni, Kiegeani and Chole villages that comprise semi-urban areas and main tourism areas in the Island. These conditions are expected to improve following the airport upgrade.

In general, the economy of Mafia was found to be closely related with tourism and passengers arrivals at the airport because total income is low during the wet or low tourism season and non-farm self employment (Business) and salaried employment were among the top five sources of total income of people interviewed. Arrivals were affected by external factors, including the world economic crisis.

6. RECOMMENDATIONS

Respondents of the survey pointed out the need for electricity and improved roads to facilitate easy tapping of benefits. These are some of the expected limiting factors that should be addressed by stakeholders of the project such as MCC/MCA-T, the Central Government and Mafia District Council.

The baseline survey has established that tourism seasons are more closely related to the economic and investment activities in the Island. Therefore, assessment of the performance of the airport upgrade project should be aligned with tourism seasons rather than the climatic seasons. Therefore, the measurement of outcome indicators of the project should make reference to low and high tourism seasons instead of dry and wet climatic seasons. Tourism seasons in Mafia should be divided into low tourism season (March to June) that coincide with the wet season and high tourism season (July – December – February) during the dry and intermediate climate seasons.

The Ministry of Natural Resources and Tourism and Tanzania Tourist Board (TTB) are interested in data of tourists visiting Mafia first before other attractions in the country or Mafia alone. This was also not covered by the baseline survey because it was outside the project logic indicators. Future surveys should include a question on this variable of interest to the Government and tourism sector promoters.

Mafia District Council should make efforts to formalize and license most of the economic and investing activities in the island. The Council can apply and get support from the country's Property and Business Formalization Programme popular for its Kiswahili acronym – Mkurabita that is under the President's Office.

Mafia Island has traditional and cultural practices in rural areas that can affect people to benefit from the project. The average income of male headed households is double that of female headed households. Purposeful efforts should be made by the gender unit of MCA-T to help women to benefit from the project equally with men. The performance evaluation should also consider the effect of the improved water transport that will follow after completion of the boat and ship landing Stage (Jetty).